SOUTH ANDROID SURVSTAR

OPERATION GUIDE

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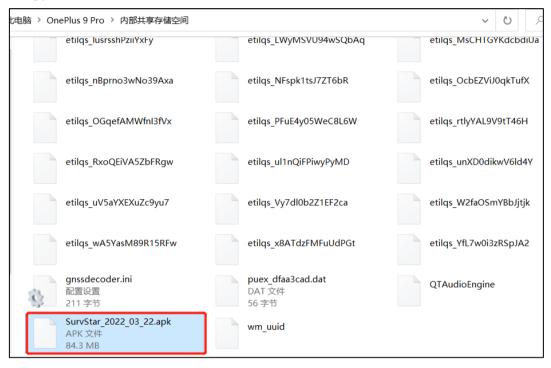
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Chapter 1 Installation & Uninstallation

1-1 Installation

1. Copy the APK installation file into android device.



2. Find the APK installation file in android device and click it to start install SurvStar.

16:26	*********	il Sil 🛑	16:27	B 8 ¥ * 9 B %I %I 🗰
Phone storag Phone storage	je 88	Q :	IS Isk	urvStar un: 1.20.220322.b Size: 84.4 MB
etilqs_Vy7d	l0b2Z1EF2ca		Fro	m "My Files"
etilqs_W2fa 2 KB 3/29/22	ıOSmYBbJjtjk		Auto-delete Al	PK and residuals (84 💿
etilqs_wA51 2 KB 4/27/22	íasM89R15RFw			
etilqs_x8AT	dzFMFuUdPGt		Series Se	stallation complete
etilqs_YfL7w 2 KB 5/5/22	v0i3zRSpJA2		Go to "App Mo	arket" to install more apps 🔷 🗦
gnssdecod 211 B 1/10/22				
puex_dfaa3 56 B 12/22/21				
QTAudioEn 280 B 5/5/22				
	022_03_22.apk MB Version: 1.20.220	3322		
wm_uuid 36 B 6/20/21			Open Ap	p Done

1-2 Uninstallation

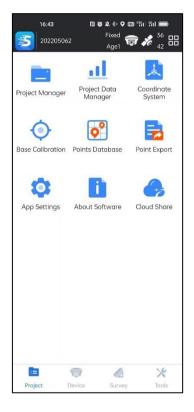


Find the SurvStar icon in android device, and long press it, and then click Uninstall, the system will uninstall it.

Chapter 2 Main Interface

2-1 Introduction

Below is the main interface of SurvStar, it includes: general information at the top, function modules at the bottom and grid function buttons in the middle.



2-2 General Information

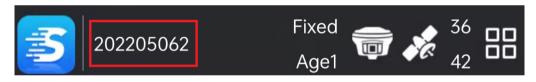
Below is the general information bar, where we can see the current project's name, satellites and coordinates information.



Click , we will enter to About Software page. In that page, we can check the version of SurvStar, register the SurvStar and check new version.

16:49	₽ \$ \$ \$ 0 8	ងា ដា 💼
<	About Software	?
Su	JrvStar 1.31.220428.beta	
Software	Register	>
Check Ne	w Version	>
SOUT	Copyright (C) 2015 "H GNSS NAVIGATION CO., L	.TD.

This is the name of current project.



Solution status: includes Single, Float, Differential and Fixed.

Age1: current differential delay is 1.

e.g., Single, 0, current solution is single, and differential delay is 0.

Fixed, 1: current solution is fixed, and differential delay is 1.

36/42: current number of satellites which used to solution, and the total tracked satellites number.

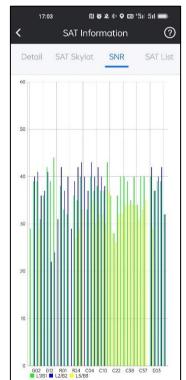
Click , we will enter to Communication page. In that page, we can search the device and pair with it.

17:03 🕅 🕅	A 🕫 🖸 🖽 👘 🖉 🕸 🖉
< Communi	ication ⑦
Model	RTK >
Manufacturer	SOUTH >
Communication Mode	Bluetooth >
Bluetooth Device List	Show all
Q911C3148626533	E8:97:9A:F8:B4:CF
AG30BB148018228	00:25:CA:5F:18:F2
SG70C2133379997	00:25:CA:5E:CD:24
SG70C2133380001	00:25:CA:5E:CD:46
SG70C2133379988	00:25:CA:5E:CD:02
AG30BB148018225	00:25:CA:5F:27:0E
\$910C2148619394	00:25:CA:5E:B9:88
Debug	Disconnect

Click , we will enter to SAT Information page. In that page, we can check the

position information, accuracy, base position, SAT skylot, SNR and SAT list.

	N & & * 9 103 "HI HI	17:03	₽\$\$\$\$
SAT In	formation ?	< s	AT Information
Detail SAT Skyle	ot SNR SAT List	Detail SAT	Skylot SNR
sition Information		Fixed(G7+R3+C	C18+E5/40)
olution:Fixed	Time(s):17:03:38		
at:N23°10'53.5992"	Northing: 2564763.543		
Lon:E113°25'01.0204"	Easting: 440303.774	*	
Height:45.8221	Height: 45.822		ູ
Direction: 202°19'28.6707"	Speed: 0.007	ŝ	
Accuracy			9
PDOP:1.075	HRMS:0.025		24 24
VDOP:0.859	VRMS:0.017		ou
HDOP:0.534			
Base Position		GPS	GLONASS
_at:N23°06'43.2482"	Northing: 2557053.762	V BD	GALILEO



17:03 🛛 🕫 🕸 रू 🕈 🖬 👘 👘 K SAT Information ?				
Deta	il SAT Skyl	ot SN	IR S	AT List
SAT No.	SNR	Elevation Angle	Azimuth	Status
G02	29.0/0.0/0.0	38.0	314.0	Locked
G05	39.0/40.0/0.0	25.0	227.0	Locked
G06	39.0/41.0/29.0	45.0	17.0	Locked
G09	31.0/36.0/0.0	27.0	73.0	Locked
G12	36.0/37.0/0.0	33.0	300.0	Locked
G17	42.0/41.0/0.0	46.0	108.0	Locked
G19	39.0/22.0/0.0	60.0	84.0	Locked
G20	44.0/24.0/0.0	54.0	246.0	Locked
R01	0.0/31.0/0.0	15.0	31.0	Visible
R02	38.0/42.0/0.0	62.0	83.0	Locked
R15	33.0/37.0/0.0	23.0	254.0	Locked
R17	32.0/40.0/0.0	39.0	8.0	Locked
R24	0.0/29.0/0.0	26.0	71.0	Visible
C01	36.0/39.0/27.0	46.0	122.0	Locked
C02	35.0/42.0/29.0	47.0	235.0	Locked

88 , we will enter to Main Interface Style page. In that page, we can change Click the main interface style and turn on/off the functions.

	<	^{17:08} ₪ Main Inter	ତ & ଶ ଼ o ାଇ ଂଲା ଶା ∈ face Style		17:08 ₪ 🕫 ¥ Main Interfac	ໂ≉ ዋ ໝ "ຄ⊓ "ເປ ce Style		
	Main Int Style	erface	Gri	d > Main In Style	terface	(Grid >	
	Project			Project				
	Project M	Manager		Project	Manager			
	Project [Data Manager		Project	Data Manager			
	Coordine	ate System		Coordin	ate System			
	Base Ca	libration		Base Co	alibration	9		
	Points D	atabase		Points E	Database			
	Point Ex	port		Point Ex	port			
	App Set	tings		App Set	tings			
	About S	oftware		About S	oftware			
	Cloud Sł	nare		Cloud S	hare			
	Device			Device				
		C	К		ок			
17:12	Fixed .	° © "%II %II ■	17:11 2022050	12 8 ¥ ♀ 123 ° 52 Fixed Age1	511 511 ■ & ³⁴ :=	17:11 202205062	R I66 ¥ 3 ∜≎ 9 Fixed Age1	•
	<u>l</u>	1	Project N	Manager	>		×	0
Project Manager	Project Data Manager	Coordinate System	n Project I	Data Manager	> Pro	ject Manager	Coordinate System	Base Calibration
0	o		L Coordine	ate System	>	0°	0	
Base Calibration	Points Database	Point Export	🔶 🛛 Base Ca	libration	> Poir	nts Database	App Settings	About Software
Ċ.	i		Points D	atabase	>	G		
App Settings	About Software	Cloud Share	Point Ex	port	> c	loud Share (Communication	Rover
			🧔 App Sett	ings	>	2		A
			1 About Se	oftware	> Pi	oint Survey	Point Stakeout	CAD

Grid

and the

T

X Tools

Project

List

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Sea Survey

2

Cross-section

Cloud Share

Project

Simple

3

Cross-section

55 Line construction stakeout لم

Line pointwise stakeout

Gis

Chapter 3 Project

3-1 Project Manager

Search, Open and Delete Project:

The Project is saved in the default path: Internal storage/SurvStar/ProjectData. There are projects that we created before in Project List. We can search the project in the device by field search.

16:06	D @ & +> D = == == == == === Dject Manager ⑦
Project Path	Internal storoge/SurvStar/ ProjectData
Disk Free space	218.25 GB/257.60 GB
Project List	
Search	202203 × Q
20220302	2022-03-02 14:00:46
20220307	2022-03-07 10:11:18
20220321	2022-03-21 14:07:44
New	port Export Open

Choose the project we want to open, and Click Open, then the project chosen will be opened.

16:26	N 🛛 🕸 🌲 🎘 🖼 🏦 🏦 💷 🇯
Project Path	Internal storoge/SurvStar/ ProjectData
Disk Free space	218.35 GB/237.60 GB
Project List	
Search	Enter to search ${\sf Q}$
i default	2021-11-30 16:17:10
20211221	2021.12-21 14:15:47
20220117	2022-01-17 09:03:24
202201172	2022-01-17 17:15:53
202201173	2022-01-17 17:21;17
20220118	2022-01-18 11:29:17
202201182	2022-01-18 11:29:26
20220302	2022-03-02 14:00:46
20220307	2022-03-07 10:11:18
New	port Export Open

Hold down the project to be deleted for 1 second, the toolbar below will display the delete button, click Delete, and this project will be delected.

16:26	* 🧰 hit hit 📾 🕸 🕸 🛛 N
< Pro	oject Manager 🛛 🧿
Project Path	Internal storoge/SurvStar/ ProjectData
Disk Free space	218.35 GB/237.60 GB
Project List	
Search	Enter to search ${\sf Q}$
20211221	2021-12-21 14:15:47
20220117	2022-01-17 09:03:24
202201172	2022-01-17 17:15:53
202201173	2022-01-17 17:21:17
20220118	2022-01-18 11:29:17
202201182	2022-01-18 11:29:26
20220302	2022-03-02 14:00:46
20220307	2022-03-07 10:11:18
20220321	2022-05-21 14:07:44
Cancel	Delete

When we use SurvStar for the first time, we need to create a project that including the basic information such as project name, operator and coordinate system type.

14:09	D 6 & * @ %i %i @ @
< Pro	oject Manager 🛛 📀
Project Path	Internal storoge/SurvStar/ ProjectData
Disk Free space	217.56 GB/237.60 GB
Project List	
Search	Enter to search ${\sf Q}$
20220321	2022-03-21 14:07:44
🖿 default	2021-11-30 16:17:10
20211221	2021-12-21 14:15:47
20220117	2022-01-17 09:03:24
202201172	2022-01-17 17:15:53
202201173	2022-01-17 17:21:17
20220118	2022-01-18 11:29:17
202201182	2022-01-18 11:29:26
20220302	2022-03-02 14:00:46
New	port Export Details

New Project:

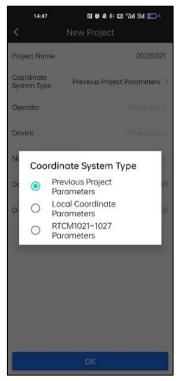
1.Click New to the page that can create a new project.

14:09	19 6 4 * 18 % 18 %
<	New Project
Project Name	20220321
Coordinate System Type	Previous Project Parameters 🚿
Operator	Please Input
Device	Please Input
Notes	Please Input.
Date	2022-03-21 14:09:05
Disk Free space	217.56 GB/257.60 GB
	ОК

2.Input the Project Name. The default project name is named after the day when the project was created, such as 20220321. This information is necessary. If we forget to input the Project Name, it will show the tips.

New Project Please Input
Please Input
Previous Project Parameters >
Please Input
Please Input
Please Input
2022-03-21 14:09:05
me cannot be set empty 217.56 GB/257.60 GB
ОК

3.Choose the coordinate system type. There are three types we can choose: Previous Project Parameters, Local Coordinate Parameters and RTCM1021~1027 Parameters.



4.Input the other information of the project.



Import Project:

If we have the existing project file (*.configure), we can import that file to apply the information to the current project.

1.Click Import to the page of Import Project.

14:09	N8***®***⊪***
< Pro	oject Manager 🛛 🧿
Project Path	Internal storoge/SurvStar/ ProjectData
Disk Free space	217.56 GB/257.60 GB
Project List	
Search	Enter to search ${\sf Q}$
20220321	2022-03-21 14:07:44
🖿 default	2021-11-30 16:17:10
20211221	2021.12-21 14:15:47
20220117	2022-01-17 09:03:24
202201172	2022-01-17 17;15:53
202201173	2022-01-17 17:21:17
20220118	2022-01-18 11:29:17
202201182	2022-01-18 11:29:26
20220302	2022-03-02 14:00;46
New	port Export Details

2.Find the project folder and choose the project file (*.configure) saved before, and click OK. Then the project file will be opened.

<	ւնուն ₪ té a≗ էն։ Import File	1 'AN AN 🗩 🕇			
File	Туре	.configure 🔝			
-	Internal Storage/20220321				
Ť	Back to Root Directory				
Ť	Back to App Storage Directory				
t	Back to Previous Directory				
	Config				
	ControlResult				
	Data				
	Image				
	Log				
C:	Survey				
	Project.configure				
	Cancel	ОК			

Export Project:

1.Click Export to the page of Export Project.

14:09 く Pr	
< Pr	oject Manager 🛛 🕐
Project Path	Internal storoge/SurvStar/ ProjectData
Disk Free space	217.56 GB/257.60 GB
Project List	
Search	Enter to search (C
20220321	2022-03-21 14:07:44
🖿 default	2021-11-30 16:17:10
20211221	2021-12-21 14:15:47
20220117	2022-01-17 09:03:24
202201172	2022-01-17 17;15:53
202201173	2022-01-17 17:21:17
20220118	2022-01-18 11:29:17
202201182	2022-01-18 11:29:26
20220302	2022-03-02 14:00:46
New	nport Export Details

2. Choose the path that we want to save the project file. Click OK. Then the project will be saved.

	16:19 🛛 🗗 🎗 🔅 ବି 🖾 ଶିଶ 🛄 🍋 🕯			
<	File Diretory			
-	Internal Storage			
Ŧ	Back to App Storoge Directory			
	.79340390			
	.Android			
	.DataStorage			
	.FileManagerRecycler			
	.OAIDSystemConfig			
	.UTSystemConfig			
	.000			
	ondorid			
	.ondroid_e21c40ado1eb475bb627			
	ddd.			
	Cancel OK			

Project Details:

1.Choose the current project, and Click Details.

14:09 K Pro	∎ 🏽 📽 🕸 📽 🕬 🕬 🕬 📼 nject Manager 🛛 ??
Project Path	Internal storoge/SurvStar/ ProjectData
Disk Free space	217.56 GB/237.60 GB
Project List	
Search	Enter to search Q
20220321	2022-03-21 14:07:44
🖿 default	2021 11 30 16:17:10
20211221	2021-12-21 14:15:47
20220117	2022-01-17 09:03:24
202201172	2022-01-17 17:15:53
202201173	2022-01-17 17:21:17
20220118	2022-01-18 11:29:17
202201182	2022-01-18 11:29:26
20220302	2022-03-02 14:00:46
New	port Export Details

2. We can find the project information, such as Project Name, Coordinate System type and so on.

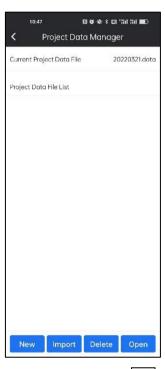
16:49	() () 🖇 🕸 💷 "Sil Sil 💼)
<	Project Details
Project Name	defoult
Coordinate System Type	Local Coordinate Parameters 🗦
Operator	defoult
Device	defoult
Notes	
Date	2021-11-30 16:17:10
Disk Free space	218.47 GB/257.60 GB
ОК	SHARE

3-2 Project Data Manager

With that function we can manage the surveyed data. We can create, import, delete and change the surveyed data.

New Project Data:

1.Click New.



2.Input the name of the new project data and click OK.

10:54	ומ י Project Dat	∎ 🔹 ¥ 🕈 📼 a Manage		
Current Proj	ect Data File	20	220321.dota	
Project Data	File List			
Crea	te new pro	oject data	file	
defaul	default123		0	
	Cancel		ОК	
			17	
New	Import	Delete	Open	

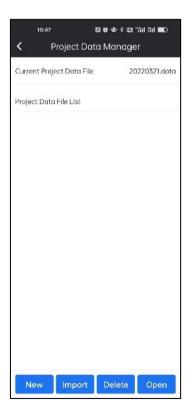
3. The new project data created successfully.

10:5	i6 🛛 🕅	6 ∿\$ 8 0 ⊡	500 500 100 0
<	Project Dat	a Manage	er
Current Pr	oject Data File	de	fault123.dota
Project Do	ita File List		
20220321	data		
New	Import	Delete	Open

Import Project Data:

We can import the project data from the file (*. data).

1.Click Import.



2.Find the correct location of the project data file and choose that file we wanted. Click



<	11:06 பலலை சு மை™வ Import File	1811 💷
File Ty	28	.data 💌
📄 In	nternal Storage	
Т Во	ack to App Storage Directory	
b 7'	9340390	1
A. 🖿	Android	
D. 🖿	DataStorage	
E .F	ileManagerRecycler	
0. 🖿	DAIDSystemConfig	
U. 📓	JTSystemConfig	
0.	iaa	
0. 🖬	Indorid	
0. 🚞	ndroid_e21c40ada1eb475bb627	
	Cancel OK	

Delete Project Data:

1.Choose the project data we wanted to delete. Then click Delete.



2.Click OK. The project data file will be deleted.



Open Project Data:

1. Choose the project data we wanted to open. Then click Open.



2. Then the chosen project data is opened.



3-3 Coordinate System

By clicking it, we can create new coordinate system by defining the name, ellipsoid, projection, 7 parameters, 4 parameters, height fitting parameters, vertical adjustment parameters, plane grid file, geoid file and local offsets.

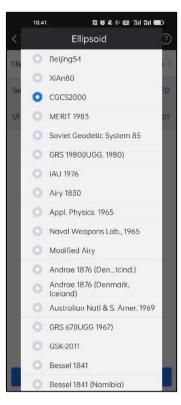
	10:33	0044:00 50 50	-
<	Coo	rdinate System	?
Cool	rdinate System	n default	⊗
•	Ellipsoid		>
	Projection		>
0	7 Parameter	s	>
٥	4 Parameter	s/Horizontal Adjustment	>
0	Height Fittin	g Porameters	>
0	Vertical Adju	istment Parameters	>
0	Plane Grid Fi	ile	>
0	Geoid File		>
0	Local Offset	s	>
E	xport	Use Existing O	K

Ellipsoid:

1.Click Ellipsoid, and enter to that page.

10:39 <	ាសង៖ 🚥 តែវ តែវ 📼 Ellipsoid 🧿
Ellipsoid	Beijing54 🗦
Semimajor Axis	6378245.0
1/f	298.3
	ОК

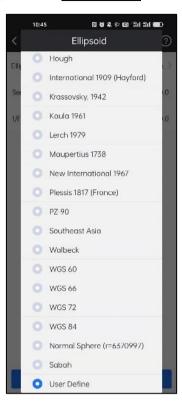
2.Click Ellipsoid and choose the project used one.



3.Click OK. Then the ellipsoid is set successfully.



We can define the ellipsoid by choose User Define in the bottom item.



Input the Semimajor Axis and 1/f. Click OK.

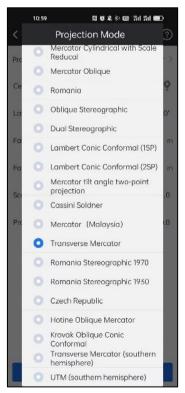
10:49	NI&&≉ ଦୋଖଧାଲା ■ି Ellipsoid ?
Ellipsoid	User Define 🚿
Semimajor Axis	6378137
1/f	298.257222101
	ОК

Projection:

1.Click Projection and enter to that page.

10:54	┃┇えれ回 当日前 ■□
<	Projection 🧿
Projection Mode	Transverse Mercator 🗦
Central Meridian	E114°00'00.0000" 🧟
Latitude of Origin	N0°00'00.0000'
False Northing	0.000 m
False Easting	500000.000 m
Scale	1.0
Projection Height	0.0
	ОК

2.Click Projection Mode and choose the project used projection.



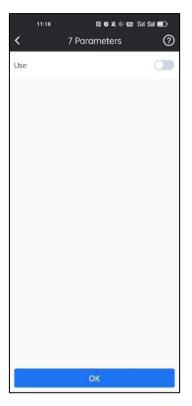
3.Input the projection parameters and click OK. Then the projection is set successfully.

11:01 < Pro	ໜອ≱ະໝະສາສາໜ⊃ ojection (?
Projection Mode	Transverse Mercator	5
Central Meridian	E114°00'00.0000"	ò
Latitude of Origin	N0°00'00.000	р,
False Northing	0.000	m
False Easting	500000.000	m
Scale	1.	0
Projection Height	0.	0
-	OF	
	OK	

We can click to set the Central Meridian by the location from the receiver.

7 Parameters:

1.Click 7 Parameters and enter to that page.



2.Click Use to activate the 7 parameters.

11:22 <	N to X ∻ to at at an an 7 Parameters (, ?
Use		D
Model	Burso Wolf	>
ΔX	16.492	m
ΔY	-156.41	m
ΔZ	-80.118	m
∆α (s)		0
△ β (s)		0
$ riangle \gamma$ (s)		0
Scale (ppm)		0
	ОК	

3.Click Model and choose the project used 7 parameters model. We can choose Bursa-Wolf, Molodensky, Helmert and Strick BURSA-WOLF.

11:23	[] () 4 4:	1911年1月
		0
Use		
Model		Burso Wolf 🗧
∆X		16.492 m
∆γ		-156.41 m
	Model	m
_ ОВ	ursa-Wolf	0
0 M	lolodensky	0
0 н	lelmert	U
4) 🔘 S	trick BURSA-WOLF	0
Scale (ppm)		0
-	_	
	OK	

4.Input the 7 parameters and click OK. Then the 7 parameters model is set successfully.

11:30	N 161 & & 189 1811 181 182	
<	7 Parameters	0
Use		0
Model	Burso Wo	lf >
∆X	16.492	2 m
ΔY	-156.4	1 m
ΛZ	-80.118	3 m
∆a (s)		0
△β (s)		0
∆γ (s)		0
Scale (ppm)	1	8
4	ОК	

If this function is enabled, the icon $\stackrel{\mbox{\tiny Φ}}{=}$ in front of it will turn to $\stackrel{\mbox{\tiny Φ}}{=}$.

4 Parameters/Horizontal Adjustment:

1.Click 4 Parameters/Horizontal Adjustment and enter to that page.

<	11:38 🛛 🗗 🎗 🎨 😅 "វីអា ដារ 🔳 4 Parameters/Horizontal Adjustment	□ ⑦
Use		
-		
	ОК	

2.Click Use to activate the 4 parameters/Horizontal Adjustment.

۱۱:39 ها A Parameters/I Adjustm	
Use	
Translate Northing	0 m
Translate Easting	0 m
Rototion	0°00'00.0000'
Scale	1.0
Original Northing	0 m
Original Easting	0 m
OK	
UK	

3.Input the 4 parameters/Horizontal Adjustment parameters and click OK. Then the 4 parameters/Horizontal Adjustment is set successfully.

	a 11:41 میں AParameters Adjustr		
	Use		
	Translate Northing	5000000 m	
	Translate Easting	830000 m	
	Rotation	0"00'00.0000'	
	Scale	1.0	
	Original Northing	0 m	
	Original Easting	0 🔕 m	
	ОК		
	a		
is function is enabled, t	he icon in f	Front of it will turn to	

Height Fitting Parameters:

1.Click Height Fitting Parameters.

<	10:33 r Coordinate	9 6 & ≉ 📼 %il %il ■ e System ?
Coor	dinate System	default 🛞
0	Ellipsoid	5
•	Projection	0
0	7 Parameters	>
ø	4 Parameters/Horiza	ontal Adjustment
0	Height Fitting Poram	neters >
o	Vertical Adjustment	Parameters >
0	Plane Grid File	>
ø	Geoid File	>
ø	Local Offsets	5
E	xport Use Ex	kisting OK

2.Click Use. And input the height fitting parameters. Click OK.

<	15:37 الا ک الا اللہ اللہ اللہ اللہ اللہ Height Fitting Parameters 🕐
Use	
A0	679866.796
A1	64090646.799
A2	845.465
A3	69.369
A4	5.786
A5	0.468
X0	800000 m
Y0	d 🐼 m
	ок

3. Then the height fitting parameters are enabled. The icon in front of it will turn

to 🍳 .

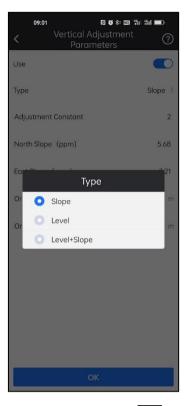
	15:38 🛛 🕅 🕸 🏦 💷 កំរៅ កំរៅ 💷 🛉	
<	Coordinate System	?
Coor	dinate System	default
٠	Ellipsoid	>
•	Projection	>
0	7 Parameters	>
0	4 Parameters/Horizontal Adjustm	nent >
•	Height Fitting Parameters	>
•	Vertical Adjustment Parameters	>
0	Plane Grid File	>
0	Geoid File	>
•	Local Offsets	>
E	xport Use Existing	ОК

Vertical Adjustment Parameters:

1.Click Vertical Adjustment Parameters.

	10:33	004*02	s Sal Sal 📼 E
۲	Coo	rdinate System	0
Coor	dinate System	1	default 🔘
0	Ellipsoid		5
•	Projection		>
0	7 Parameter	s	>
٥	4 Parameter	s/Horizontal Adjus	tment >
0	Height Fittin	g Porameters	>
0	Vertical Adju	istment Parameter	s >
0	Plane Grid F	ile	>
0	Geoid File		>
0	Local Offset	s	5
Ē	xport	Use Existing	ок
_ <u> </u>	Aport	USC EXISTING	OK

2.Click Use. Choose the calculate type. We can choose slope, level and level + slope.



3. Input the vertical adjustment parameters. Click OK.

09:01 N & Vertical Adjustm Parameters	nent ?
Use	
Туре	Slope >
Adjustment Constant	2
North Slope (ppm)	5.68
East Slope (ppm)	3.21
Original Northing	0 m
Original Easting	500000 🛞 m
ОК	

4. Then the vertical adjustment parameters are enabled. The icon in front of it will

turn to ု .

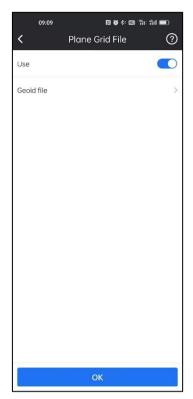
<	09:05 🛛 🛚 🐼 🕸 គីរ។ តារ Coordinate System	• ⑦
Coor	dinate System d	lefault
•	Ellipsoid	>
•	Projection	>
0	7 Parameters	>
0	4 Parameters/Horizontal Adjustment	>
0	Height Fitting Parameters	>
	Vertical Adjustment Parameters	>
0	Plane Grid File	>
0	Geoid File	>
0	Local Offsets	>
E	xport Use Existing (ок

Plane Grid File:

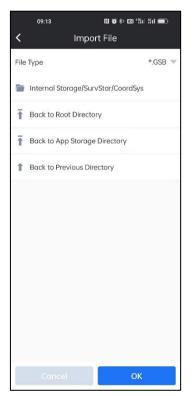
1.Click Plane Grid File.

<	10:33 D A Coordinate S	ø≱≉ ⊠ ‱ i i i i i I III ■ System ?
Coor	rdinate System	default 🚫
0	Ellipsoid	5
•	Projection	>
0	7 Parameters	>
0	4 Parameters/Horizont	al Adjustment 💦 🗦
0	Height Fitting Paramet	ers >
0	Vertical Adjustment Po	rameters >
0	Plane Grid File	>
0	Geoid File	>
0	Local Offsets	>
	xport Use Exis	ting OK

2.Click Use. And click Geoid file.

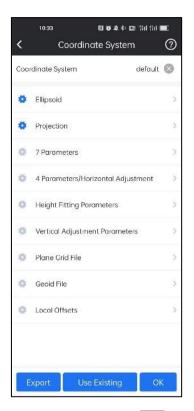


3.Find the folder of plane grid file (*.GSB). And choose the plane grid file we wanted to import. Click OK. Then the plane grid file will be applied.



Local Offsets:

1.Click Local Offsets.



2.Click Use. And input the local offsets. Click OK. Then the local offsets will be applied.

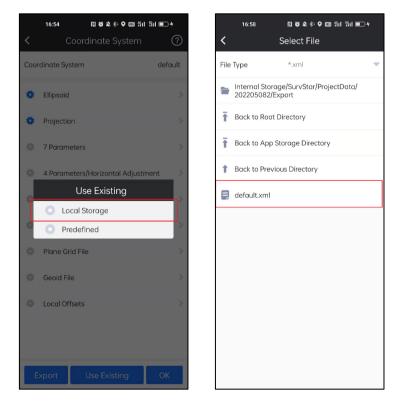


Use Existing File:

We can click Use Existing to select and apply the existing predefined coordinate system or use the coordinate system file (*.xml).

<	16:54 민영옥* 9 교 해 해	∎+ ?
	Coordinate System	default
*	Ellipsoid	>
٠	Projection	>
•	7 Parameters	>
٥	4 Parameters/Horizontal Adjustmen	t >
•	Height Fitting Parameters	>
•	Vertical Adjustment Parameters	>
•	Plane Grid File	>
•	Geoid File	>
•	Local Offsets	>
E	xport Use Existing	ОК

Click Local Storage, find the coordinate system file (*.xml) and click it, the coordinate system will be applied.



Click Predefined, then click Country and select the country or region (Alphabetical) where the needed coordinate system is located.

	16:54 🖪 🏵 🔉 🕸 🛱 🖽 🏦 🎁	àd 💷 4	17:03	* * 0 11	Q %il %il ा⊃+		17:08	[1] ⑧ ▲ 桛 ♀ [23] 위네 第日	□+
<	Coordinate System	?	<	Predefined	d ()	<		Country	?
Соо	rdinate System	default	Country		All >	Co	0	All	2
			Search			Se	0	ANGOLA	
*	Ellipsoid	ĺ,	ID	Coordinate System	Ellipsoid	ID		ARGENTINA	
*	Projection	>			Liipsolu			AUSTRALIA	1
-	7 Parameters	>	0 NA	D83/Alabama (East)	GRS 1980	0		AUSTRIA	
			1 NA	D83/Alabama (West)	GRS 1980	1	-	BELGIUM	
	4 Parameters/Horizontal Adjustme Use Existing	ent >	2 N/	AD83/Alaska (Zone 1)	GRS 1980	-		BOSNIA BRAZIL	
-	Local Storage	>	2 11/2	CD65/Aldskd (Zone I)	GKS 1980	2		CABO VERDE	
-	Predefined	>	3 NA	D83/Alaska (Zone 2)	GRS 1980	3		CANADA	
	Plane Grid File		4 NA	D83/Alaska (Zone 3)	GRS 1980	4		CHINA	
							0	CHINA/HONG KONG	
*	Geoid File	>	5 NA	D83/Alaska (Zone 4)	GRS 1980	5	0	CHINA/Macao	
-	Local Offsets	>	6 NA	D83/Alaska (Zone 5)	GRS 1980	6	0	COLOMBIA	
			7 N4	D83/Alaska (Zone 6)	GRS 1980	7	0	COSTA RICA	
			/ 19/	idoginiuska (Zone 6)	GR3 1700		0	CROATIA	
				D83/Alaska (Zone 7)	GRS 1980	8	0	CYPRUS	
Ľ	Export Use Existing	OK		ОК	Details		0	CZECH	

Then select the needed coordinate system and click OK to apply it, we can click Details to check its information.

<	17:11 ₪®≰* Predefine	oo ⊠ %il *%il ∎⊃+ d ?		o 🎗 🍀 🗣 📼 🏭 🏭 🔳
Count			Title	Contents
iearc	h		Country	CHINA
0	Coordinate System	Ellipsoid	Describe	BEIJING 1954/3-deg Gauss-Kruger CM 0
0	BEIJING 1954/3-degree Gauss-Kruger CM 075E	Krassowsky 1940	Ellipsoid Name	Krassowsky 194
1	BEIJING 1954/3-degree Gauss-Kruger CM 078E	Krassowsky 1940	Semimajor Axis	6378245
2	BEIJING 1954/3-degree Gauss-Kruger CM 081E	Krassowsky 1940	1/f	298.3
3	BEIJING 1954/3-degree Gauss-Kruger CM 084E	Krassowsky 1940	Projection Parameters	Transverse Merca
4	BEIJING 1954/3-degree Gauss-Kruger CM 087E	Krassowsky 1940	Central Meridian	E84°00'00.0000
5	BEIJING 1954/3-degree Gauss-Kruger CM 090E	Krassowsky 1940	Latitude of Origin	N0°00'00.0000'
6	BEIJING 1954/3-degree Gauss-Kruger CM 093E	Krassowsky 1940	False Northing	0.0
7	BEIJING 1954/3-degree Gauss-Kruger CM 096E	Krassowsky 1940	False Easting	500000.0
8	BEIJING 1954/3-degree	Krassowsky 1940	Scale	1.0
	ок	Details	Projection Height	0.0

		o %il "%il ∎⊡4
<	Predefined	?
Cour	ntry	All >
Sear	rch	cg 🙁
ID	Coordinate System	Ellipsoid
56	16	CGCS2000
57	CGCS2000/Gauss-Kruger zone 17	CGCS2000
58	CGCS2000/Gauss-Kruger zone 18	CGCS2000
59	CGCS2000/Gauss-Kruger zone 19	CGCS2000
60	CGCS2000/Gauss-Kruger zone 20	CGCS2000
61	CGCS2000/Gauss-Kruger zone 21	CGCS2000
62	CGCS2000/Gauss-Kruger zone 22	CGCS2000
63	CGCS2000/Gauss-Kruger zone 23	CGCS2000
64	CGRS93/LTM	WGS 84
	ОК	Details

We can also search coordinate system with keywords in Search bar.

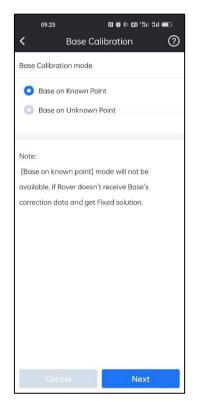
Export:

If we need to save the coordinate system in file, we can click $\overline{\text{Export}}$, input File Name, select the path to save it and click $\overline{\text{OK}}$, the coordinate system file will be exported.

16:54 🛛 🕉 🔌 🕸 🛱 🕅 🏦 🕅	••	17:22	364 \$ € 0 23 11 11 1 10 4
 Coordinate System 	?	< File	e Export
Coordinate System	default	File Name	default
🔅 Ellipsoid	>	File Type .xml	
Projection	>	Internal Storage/S 202205082/Expor	SurvStar/ProjectData/ t
7 Parameters	>	Back to Root Direc	ctory
4 Parameters/Horizontal Adjustmer	nt >	Back to App Stora	ge Directory
Height Fitting Parameters	>	Back to Previous I	Directory
Vertical Adjustment Parameters	>	efault.xml	
Plane Grid File	>		
Geoid File	>		
🔹 Local Offsets	>		
Export Use Existing	ОК	Cancel	ОК

3-4 Base Calibration

By clicking it, we can calibrate the base coordinate by using base and rover. There are two ways to calibrate: one is Base on Known Point Calibration, with base coordinate before and after station change to perform calibration; the other is Base on Unknown Point Calibration, with the coordinates of the points collected before and after the station change.



Base on Known Point:

Base on Known Point Calibration only can used in fixed solution.

1.Choose Base on Known Point, and click Next. Then enter into this page.

09:33	N @ *: @ '% % =
< Base Ca	libration ⑦
Base NEH	Previous Base Info >
Name	p1
Northing	2558620.103
Easting	435314.597
Height	25.987
Measured Antenna Height	1.80
Antenna Height Type	Pole Height 🚿
O Base SN	SG50B4148506710 >
Base BLH	
Latitude	N23°07'33.2312"
Longitude	E113°22'06.5399"
Elevation	25.987 m
ID	1
Cancel	Calibrate

2.In that page, we can click Base NEH to find the historical base station information.

And it will enter to Historical base station page.

09:33	N 6 8 📾 "N NI 💷	Ξ.	19:33	RI 6	នះ 💷 "ដីរ	ដា 💷
< Base Cal	bration 🤅	<	Histori	cal base s	station	
Base NEH	Previous Base Info	Total 28	Pag	je 1/1		
Name	p1	id	Longitude	Latitude	Elevation	North
Northing	2558620.103	0	E113°11'56.750 8"	E23°18'45.532 4"	10.019	2579388
Northing	2556620.105	1	E113°22'06.539 9'	E23°07'33.2312	25.987	2558620
Easting	435314.597	1	E113°22'06.539 9'	E23°07'33.2312	25.987	2558620
Height	25.987	1	E113°22'06.539 9'	E23°07'33.2312	25.987	2558620
Measured Antenna Height	1.80	0	E113°22'06.539 9'	E23°07'33.2312	25.987	2558620
	D. I. H. S. I.	1	E113°22'06.539 9'	E23°07'33.2312	25.987	2558620
Antenna Height Type	Pole Height	1	E112°59'58.20	E22°59'58.200 0"	30.500	2544832
Base SN	SG50B4148506710	1	E112°59'58.20	E22°59'58.200 0"	30.500	2544832
Base BLH		1	E112°59'58.20 00"	E22°59'58.200 0"	30.500	2544832
DUSC DEIT		1	E112°59'58.20	E22°59'58.200 0"	30.500	2544832
Latitude	N23°07'33.2312'	1	E113°22'06.539 9'	E23°07'33.2312	25.987	2558620
Longitude	E113°22'06.5399'	0	E113°22'06.539 9'	E23°07'33.2312	25.987	2558620
	05.005	1	E113°22'06.539 9'	E23°07'33.2312	25.987	2558620
Elevation	25.987 r	0	E113°25'00.35 93*	E23°10'52.994 3*	46.576	2564745
D	1	1	E112°59'58.20	E22°59'58.200	30 500	2544RZ
Cancel	Calibrate	В	АСК	C	hoose	

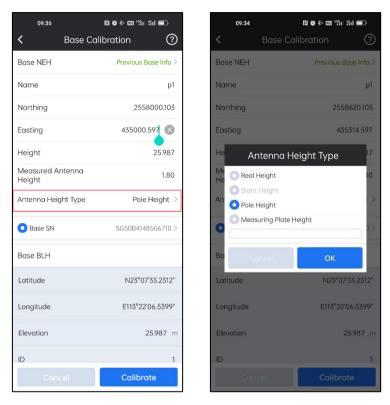
3.We can choose the needed historical base station, and click Choose, then the coordinate will apply to the Base Calibration page.

09:33 < Base Co	เมชะะ ໝ "ม "ม ≡ alibration ?
Base NEH	Previous Base Info >
Name	p1
Northing	564766.380
Easting	40312.183
Height	56.950
Measured Antenna Height	1.80
Antenna Height Type	Pole Height >
O Base SN	SG50B4148506710 >
Base BLH	
Latitude	N23°07'33.2312"
Longitude	E113°22'06.5399"
Elevation	25.987 m
ID	1
Cancel	Calibrate

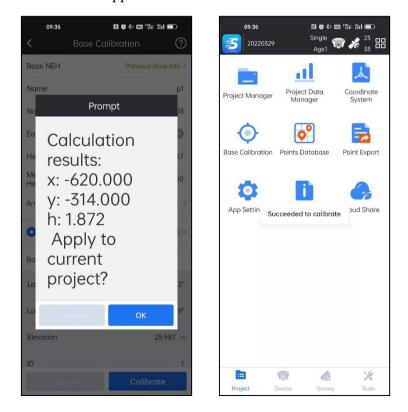
4. We can also input the needed base information with name and coordinate.

09:36	N 🌣 🥴 🕬 'nı fil 💷
< Base Co	alibration
Base NEH	Previous Base Info >
Name	p1
Northing	2558000.103
Easting	435000.597
Height	25.987
Measured Antenna Height	1.80
Antenna Height Type	Pole Height >
O Base SN	SG50B4148506710 >
Base BLH	
Latitude	N23°07'33.2312"
Longitude	E113°22'06.5399"
Elevation	25.987 m
ID	1
Cancel	Calibrate

5. Then input the measured antenna height and click antenna height type to choose the right antenna height type.



6.Click Calibrate and then there will be a popup to show the calculation results. Click OK then the results will be applied.



7.We can open the base station information to check the change.

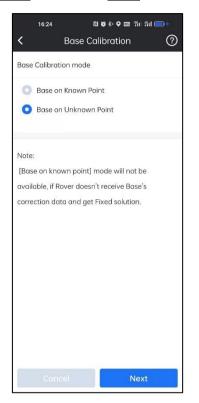
14:43	NUKS⊀÷Q None		09:37	N \$ * 8 * * II *II ■)	09:37	1) 🐼 *: 📾 "îi fii 💼
20220329	Age0	🗟 ¥ 🖁 🖽	< SAT In	formation	< SAT Ir	nformation
	<u>l</u>	L.	Detail SAT Skyle	ot SNR SAT List	Detail SAT Skyl	ot SNR SAT List
Project Manager	Project Data Manager	Coordinate System	Height:48.8623	Height: 50.734	Height:49.4189	Height: 51.291
\odot	♀ [♀]		Direction: 137°59'27.75	51" Speed: 0.126	Direction: 214°22'04.4568"	Speed: 0.080
Base Calibration	Points Database	Point Export	Accuracy		Accuracy	
-			PDOP:1.239	HRMS:5.902	PDOP:1.241	HRMS:7.276
App Settings	About Software	Cloud Share	VDOP:1.058	VRMS:2.024	VDOP:1.054	VRMS:2.154
			HDOP:0.700		HDOP:0.674	
			Base Position The old b	ase station coordinate	Base Position The new	base station coordinate
			Lat:N23°07'33.2312"	Northing: 2558620.103	Lat:N23°07'33.2312"	Northing: 2558000.103
			Lon:E113°22'06.5399"	Easting: 435314.597	Lon:E113°22'06.5399"	Easting: 435000.597
			Height:25.9866	Height: 27.858	Height:25.9866	Height: 27.858
			Horizontal Distance79	11.148	Horizontal Distance79	11.716
	Image: Constraint of the second sec	X Tools	ID:1		ID:1	

These are the information of base station and the base device SN.

09:35	N 🏽 🕸 🎫 🛍 🗂 💷
< Base Ca	llibration
	le :
Northing	2558620.103
Easting	435314.597
Height	25.987
Measured Antenna Height	1.80
Antenna Height Type	Pole Height >
O Base SN	SG50B4148506710 >
Base BLH	
Latitude	N23°07'33.2312"
Longitude	E113°22'06.5399"
Elevation	25.987 m
ID	1
Cancel	Calibrate

Base on Unknown Point:

Choose Base on Unknown Point. And Click Next.



Firstly, we need to input the targeted North, East and Height. If we have the surveyed it in point database, we can click the icon in Rover Known NEH bar, and choose the right point, click OK. Then the NEH coordinate will input in it.

16:25 RI 🗑 : K Base on Unkno	» e 📾 ដារ ដារ 🔜 + own Point 🛛 🧿	<	16	5:28 Poir	nts Datab		՝Ցվ Ֆվ 🗩	<	16:28 Base on Unl	או או פי אי פי מויזיון און וווו ווווווווווווווווווווווווווו
Rover Known NEH	Q	Ρ	t nam	ne 🗸 Plec	ise Input		Search	Rov	er Known NEH	Q°
Name	p1	Tot	tal 4	Pag	ge 1/1			Nai	me	Pt3
North	2558620.103 m	N ₽	lame Pt4	Northing 2564791.523	Easting 440370.345	Height	Latitude N23°10'54.5173'	Nor	th	2564809.012 m
East	435314.597 🙁 m	Ŷ	Pt3	2564809.012	440373.224	18.409	N23°10'55.0862	Eas	it	440373.224 🚫 m
Height	25.987 m	우 우	Pt2	2564809.985			N23°10'55.1173" N23°10'54.7303	Hei	ght	18.409 m
Measured Antenna Height	1.800 m	т	Pt1	2564798.089	440366.658	18.096		Me	asured Antenna Heigl	ht 1.800 m
Antenna Height Type	Pole Height >							Ant	enna Height Type	Pole Height 🗦
Input BLH	¢								Input BLH	ø
Latitude	N23°10'55.0862"							Lat	itude	N23°10'55.0862"
Longitude	E113°25'03.4558"							Lor	gitude	E113°25'03.4558"
Elevation	18.409 m							Ele	vation	18.409 m
								Fixe	ed H: 0.012 V: 0.020	
Cancel	Calibrate		Add	Edit	Detail	s	ок		Cancel	Calibrate

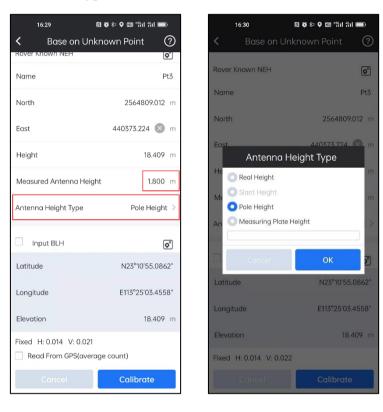
Or we can input NEH information directly.

16:25 🖪 🕻	\$ *• 🕈 🖽 "fil fil 🥅 4
Sase on Unkr	nown Point 🛛 🧿
Rover Known NEH	Q°
Name	p1
North	2558620.103 m
East	435314.597 🔘 m
Height	25.987 m
Measured Antenna Height	1.800 m
Antenna Height Type	Pole Height >
Input BLH	Q°
Latitude	N23°10'55.0862"
Longitude	E113°25'03.4558"
Elevation	18.409 m
Cancel	Calibrate

Then we need to get the needed to calibrate coordinate: latitude, longitude and elevation. There are two ways we can choose: Collect coordinates on site or use the existing longitude, latitude and Elevation.

Collect coordinates on site:

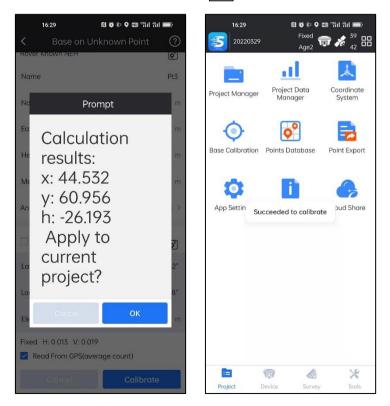
Input the measured antenna height and click antenna height type, choose the right antenna height measured type.



Then click <u>Calibration</u> to calculate the calibration parameters. If we don't click the Read From GPS(average count). The coordinate survey will only do for one time. If we click it, then it will collect for 5 times.

16:29	N 🎖 🕸 🗘 📼 'Sil Sil 🥅
C Base on Un	known Point 🧿
Name	Pt3
North	2564809.012 m
East	440373.224 🚫 m
Height	18.409 m
Measured Antenna Heig	ght 1.800 m
Antenna Height Type	Pole Height >
	-
Input BLH	Q°
Latitude	N23°10'55.0862"
Longitude	E113°25'03.4558"
Elevation	18.409 m
Fixed H: 0.014 V: 0.021	
Read From GPS(aver	rage count)
Cancel	Calibrate

It will show the calculation results, and click OK. Then the calibration is finished.

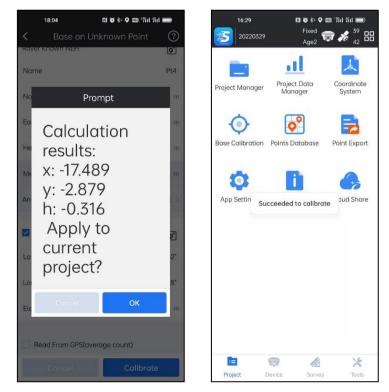


Use the existing longitude, latitude and Elevation:

Click Input BLH. If we have the surveyed point in point database, we can click the icon in right of Input BLH. And choose that point. Or we can input BLH information directly.

16:28	🛯 🕸 🖓 🖾 भी। 👘	16:28 🕅 🕯	S ≉: O 103 °811 811 🗩	16:28 🔊 🕅	Si ≉: ♥ 🚥 "≌il #il 🛑	
C Base on Unkr		C Base on Unkno	own Point 🕜	C Base on Unkno	own Point 🛛 🕐	
	Q		_			
Name	Pt3	Name	Pt3	Name	Pt3	
North	2564809.012 m	North	2564809.012 m	North	2564809.012 m	
East	440373.224 m	East	440373.224 m	East	440373.224 m	
Height	18.409 m	Height	18.409 m	Height	18.409 m	
Measured Antenna Height	1.800 m	Measured Antenna Height	1.800 m	Measured Antenna Height	1.800 m	
Antenna Height Type	Pole Height >	Antenna Height Type	Pole Height 🚿	Antenna Height Type	Pole Height >	
Input BLH	Q°	Input BLH	Q	Input BLH	ୖ	
Latitude	23.10550862 🚫	Latitude	23.10550862 🛞	Latitude	23.10550862 🔘	
Longitude	E113°25'03.4558"	Longitude	E113°25'03.4558"	Longitude	E113°25'03.4558"	
Elevation	18.409 m	Elevation	18.409 m	Elevation	18.409 m	
Fixed H: 0.012 V: 0.019		Fixed H: 0.012 V: 0.019		Fixed H: 0.012 V: 0.019		
Read From GPS(averag	e count)	Read From GPS(average	count)	Read From GPS(average count)		
Cancel	Calibrate	Cancel	Calibrate	Cancel	Calibrate	

Then click Calibrate. It will show the calculation results, and click OK. Then the calibration is finished.

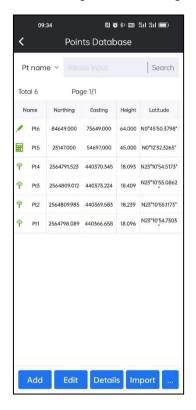


We can open the base station information to check the change.

14:43	NONE	® %II %II ■) •	^{09:37}	n o * ∞ ** 1 ** 1 ■ formation ?	09:37 く SAT In	N & Հ ։ Կես ես 📼 formation ?
	<u>l</u>	*	Detail SAT Skyle	ot SNR SAT List	Detail SAT Skyl	ot SNR SAT List
Project Manager	Project Data Manager	Coordinate System	Height:48.8623	Height: 50.734	Height:49.4189	Height: 51.291
\odot	o °		Direction: 137°59'27.75	51" Speed: 0.126	Direction: 214°22'04.4568"	Speed: 0.080
Base Calibration	Points Database	Point Export	Accuracy		Accuracy	
-			PDOP:1.239	HRMS:5.902	PDOP:1.241	HRMS:7.276
App Settings	About Software	Cloud Share	VDOP:1.058	VRMS:2.024	VDOP:1.054	VRMS:2.154
			HDOP:0.700		HDOP:0.674	
			Base Position The old b	ase station coordinate	Base Position The new	base station coordinate
			Lat:N23°07'33.2312"	Northing: 2558620.103	Lat:N23°07'33.2312"	Northing: 2558000.103
			Lon:E113°22'06.5399"	Easting: 435314.597	Lon:E113°22'06.5399"	Easting: 435000.597
			Height:25.9866	Height: 27.858	Height:25.9866	Height: 27.858
			Horizontal Distance79	11.148	Horizontal Distance79	11.716
Froject I	Device Survey	Tools	ID:1		ID:1	

3-5 Points Database

By clicking it, we can uniformly manage all types of coordinate points. We can input coordinate points used in survey, which offers convenient to invoke in Point Stakeout. We can also enter point name or code in the lookup to quickly search for coordinate points. It contains Add, Edit, Details, Import, Delete, Options operation.



Add:

Press Add. We can enter to the Add page. The new point will be named continuously according to the current point library point name. And we can change it.

The code is not necessary. We can leave it blank.

If we need to use the code, then we can input it directly.

09:52	N & * © %il %il ■) Add
Name	Pt7
Code	load 🔕 <table-cell></table-cell>
Coordinate Type	NEH >
Northing	m
Easting	m
Height	m
Point Type	Input Point >
Cancel	ок

Or we can input key words to search the code wanted in the code database. And click the code we need.

09:52	R 貧术 III ***II (■)	10:01	N 🐼 🕸 📾 🖏 l Hil 💷
<	Add	<	Add
Name	Pt7	Name	S1
Code	bui 🗴 🕼	Code	BLDG 🛞 👪
BUILDING CORNE	JEH >	Coordinate Type	NEH >
Northing	m	Northing	m
Easting	m	Easting	m
Height	m	Height	m
Point Type	Input Point >	Point Type	Input Point 🔌
Cancel	ОК	Cancel	ОК

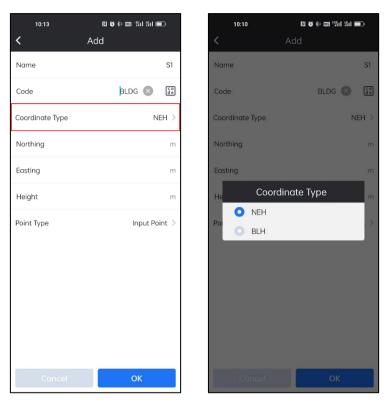
We can also click the icon in right of the Code bar, and enter to the code database. There is a default code database in SurvStar. Choose the code we need and click OK.

10:06	N 🛛 🕸 🎋 🚥 "Sil Sil 🗩	10	:07	N 🛛 🕸 🏶 🖏 🏦 👘 🗩	10:07	N 🛛 🕸 🏦 📾 🛍 🏭 🗩
<	Add	<	Coc	le	< ,	٩dd
Name	S1	Search		Enter to search ${\sf Q}$	Name	S1
Code	(ce	Total 149	Page 1/2		Code	BLDG 🔕 🕄
		No	Attr. nome	Code		
Coordinate Type	NEH >	10	CURB	BCB	BUILDING(BLDG) Cooramate type	NEH >
N for sale for se		11	BRIDGE DECK	BDK		
Northing	m	12	BORE HOLE	вн	Northing	m
Easting	m	13	BASELINE	BL.	Easting	m
Height	m	14	BUILDING CORNER	BLDC	Height	m
•		15	BUILDING	BLDG	Ŭ	
Point Type	Input Point 🚿	16	BENCHMARK	вм	Point Type	Input Point 🗦
		17	BARRIER POST	BP		
		18	BRIDGE PIER	BPR		
		19	BRIDGE RAILING	BRR		
		20	SHRUB	BRSH		
		21	BUSH	BSH		
		22	BROADLEAF TREE	BT		
		23	BARBWIRE FENCE	BWF		
	ОК	Ba	ck Mana	ige OK	Cancel	ОК

Click Manage. We can manage the code database. It includes Add, Edit, Delete, Choose and Import. Click Add to add a code library. We can create the code we need.

11:	03 Riotster op %il %il ●	11:	08 N 🏹 🕸 🕸 🕅 👘 I 👘 I	11:09	Ri & *: ♥ *#il #il 🗊
<	Code Library Manager	<	Code Library	<	Edit
Total 1	Page 1/1	Databas	e name	Attr. name	
Database	Full path	Total 0	Page 0/0		
Preset01	System Preset	No	Attr. name Code	Code	L
			B		
			No data on current page		
Add	Edit Delete Choose	Add	Edit Delete OK	Cane	cel OK

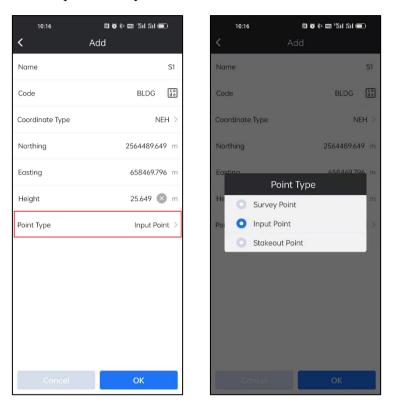
Then we need to choose the coordinate type. There are two types: NEH and BLH. It will be NEH by default. We can change it by clicking the Coordinate Type bar.



Then we can input the coordinate of the point.

10:16	[] (\$) \$: 國 第日 #日
< Name	Add S1
Nume	51
Code	BLDG de
Coordinate Type	NEH >
Northing	2564489.649 m
Easting	658469.796 m
Height	25.649 🗴 m
Point Type	Input Point >
Cancel	ОК

Then choose the point Type. There are three types: Input Point, Survey Point and Stakeout Point. It is Input Point by default.



Click OK. The new point is created in point database.

10:26				R Ø B	:• • 🚥	՝ԲՈ ԲՈ							
<			Poin	ts Datab	ase								
P1	t nam	ie ~				Search							
Tot	al 7		Ραξ	je 1/1									
N	ame	Nor	thing	Easting	Height	Latitude							
	S1	25644	89.649	658469.796	25.649	N23°10'21.7701"							
1	Pt6	8464	9.000	75649.000	64.000	N0°45'50.3798"							
Ħ	Pt5	2314	7.000	54697.000	45.000	N0°12'32.3265"							
Ŷ	Pt4	25647	91.523	440370.345	18.093	N23°10'54.5173'							
Ŧ	Pt3	2564809.012		2564809.012		2564809.01		2564809.01		2564809.012 440373.224		18.409	N23°10'55.0862
Ŷ	Pt2	25648	4809.985 440369.583		18.239	N23°10'55.1173"							
Ŧ	Pt1	25647	98.089	440366.658	18.096	N23°10'54.7303							
	Add		Edit	Detail	s Im	port							

Edit:

Select the point we want to edit and click Edit. We can edit the coordinate, code and name of the selected point.

<	1	0:39 Poin	nts Datab		ଂየሰብ 👘 🗩		10:39	N & ≉ ♥ 🚥 %il %il 📼 Edit
Pt	: nan	ne 👻 Bleo	ise Input		Search] [Name	Pt6
Tot	al 7	Ρας	ge 1/1				Code	(co de
No	me	Northing	Easting	Height	Latitude		Coordinate Type	NEH
6	S1	2564489.649	658469.796	25.649	N23°10'21.7701"		coordinate Type	Net1 -
	Pt6	84649.000	75649.000	64.000	N0°45'50.3798"		North	84649.000 m
	Pt5	23147.000	54697.000	45.000	N0°12'32.3265"		East	75649.000 m
	Pt4	2564791.523	440370.345	18.093	N23°10'54.5173'	-		
	Pt3	2564809.012	440373.224	18.409	N23°10'55.0862		Height	64.000 n
	Pt2	2564809.985	440369.583	18.239	N23°10'55.1173"		Point Type	Input Point
	Pt1	2564798.089	440366.658	18.096	N23°10'54.7303			
	Add	Edit	Detail	s Im	nport		Cancel	ОК

Input point's coordinate can be edited but the Survey point and the Stakeout Point can only edit Name and Code.

Details:

Select the point we want to check and click Details. We can check the details of the selected point.

10:45	N & ≮ 9 🚥 %I %I = D	
<	Detail	
Name	S1	J
Code	BLDG	3
Northing	2564489.649 m	
Easting	658469.796 m	1
Height	25.649 m	
Latitude	N23°10'21.7701"	1
Longitude	E115°32'51.2893"	1
Altitude	25.965	1
Solution	NONE	
Coordinate Type	BLH	ä
Local Time	2022-04-25 10:25:59	į
SD to Base	7967.407 m	3
HD to Base	7967.320 m	į

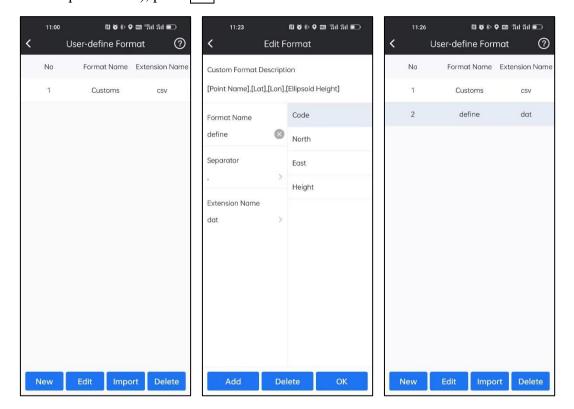
10:45 < Det	18 8 * 9 📾 181 81 🗩 tail
Local Time	2022-04-25 10:25:59
SD to Base	7967.407 m
HD to Base	7967.320 m
HD to Last	2547408.433 m
SD to Last	2547408.433 m
PDOP	0.000
HRMS	0.000
VRMS	0.000
Antenna Height	0.000 m
Antenna Height Type	Slant Height
Record Mode	Input Point
Age	1
Locked SAT	0

Import:

Click Import. Select the File Format, Point Type. Select file path and find the file and click the file. Then the file will import to point database.

10:56 ₪® * •) 🚥 %il %il 🗩	<	11	D:56	oin	nu os a nts Datab		ուս արինաներին աներաներություններություններություններություններություններություններություններություններություն
File Type *.csv-Custon	is 💌		t nan			ise Input	Juse	Search
Point Type	Input Point >	Tot	tal 9		Ρας	ge 1/1		
Angle Format	Deg.MinSec >	N	lame	Northin	ŋg	Easting	Height	Latitude
			Pt4	2564791	523	440370.345	18.093	N23°10'54.5173"
Internal Storage/SurvStar/Pro 20220329/Export	ojectData/		Pt3	2564809	.012	440373.224	18.409	N23°10'55.0862
Back to Root Directory			S1	2564489	649	658469.796	25.649	N23°10'21.7701"
		1	Pt6	84649.0	00	75649.000	64.000	N0°45'50.3798"
Back to App Storage Directo	У	Ħ	Pt5	27		eeded to in	anart	N0°12'32.3265"
Back to Previous Directory		Ŷ	Pt4				18.095	N23°10'54.5173"
		Ŧ	Pt3	2564809	.012	440373.224	18.409	N23°10'55.0862
20220329.csv		Ŷ	Pt2	2564809	985	440369.583	18.239	N23°10'55.1173"
		Ŷ	Pt1	2564798	089	440366.658	18.096	N23°10'54.7303
Format Manag	ar		Add	E	dit	Detail	sIm	nport

Click Format Manager. We can enter to User-define Format page. In that page we can manage the file format in SurvStar. Click New we can create a defined format. Input Format name, select Separator(, @ Space) and Extension Name (dat, csv, txt), select Custom format description (to select [Point Name] and press Add means format includes point name), press OK to create data format.



Then we can import the file with the defined format.

11:26	ាត៖ 🕫 📾 និ៧ និ៧ ា port File
File Type	*.dat-Pn,x,y,h,Pc 💌
Point Type	*.dat(South EGStar3.0)
👕 Internal Storage	*.RTK(South EGStar3.0)
Back to App Stor	*.txt-Pn,x,y,h,Pc
Ε .7934039α	*.txt-Pn,B,L,H,Pc(ddd.mmssssss)
🖿 .Android	*.txt-Pn,B,L,H,Pc(ddd.dddddd d)
DNUUID	*.xyh-
.DataStorage	*.NCN-Pn,y,x,h
E .FileManagerRec	*.dat-Android Format
.OAIDSystemCon	*.rw5(SurvCE RW5)
.UTSystemConfig	*.raw
ιααα	*.csv-Customs
Form	*.dat-define

Options:

Click ... in the right of the tool bar. Then we can use the other function as Delete, Filter, Recover, Share, Export and Refresh.

Tot	al 9	Pag	ge 1/1			Total 9	Pag	ge 1/1	
N	ame	Northing	Easting	Height	Latitude	Name	Northing	Easting	Height
ø	Pt4	2564791.523	440370.345	18.093	N23°10'54.5173"	, Pt	4 2564791.523	440370.345	18.093
1	Pt3	2564809.012	440373.224	18.409	N23°10'55.0862	1		Options	
ø	S1	2564489.649	658469.796	25.649	N23°10'21.7701"	1	Delete	options	
	Pt6	84649.000	75649.000	64.000	N0°45'50.3798"	1			
	Pt5	23147.000	54697.000	45.000	N0°12'32.3265"	E	Filter		
Ŷ	Pt4	2564791.523	440370.345	18.093	N23°10'54.5173"	Ŷ	Recove	r	
Ŧ	Pt3	2564809.012	440373.224	18.409	N23°10'55.0862	Ŧ	Share		
Ŧ	Pt2	2564809.985	440369.583	18.239	N23°10'55.1173"	Ŷ	 Export 		
Ŷ	Pt1	2564798.089	440366.658	18.096	N23°10'54.7303	Ť	Refresh 2304/70.007	440000.000	10.070

Delete:

Click Delete. And select the points, Then Click Delete. The selected points will be deleted.

	:36	RI 60 4	\$* Q 📖 '	՝՝՝՝վ 🛍 🗊		11	:37	RI 60 H	e o 📖	"in tin 🗊		11	1:37	RI (6	\$: Q III	ះជា អា 🗊
<	Poir	nts Datab	base		<		Poin	ts Datak	base		<		Pc	ints Datal	oase	
Pt nam	e y Plec			Search	Pt	nam	ne × itileo			Search	P	t nan	ne v P			Search
Selec	t All	2 Selec	ted			Selec	:t All	2 Selec	cted		To	tal 7	F	'age 1/1		
Name	Northing	Easting	Height	Latitude	Na	me	Northing	Easting	Height	Latitude	h	lame	Northing	Easting	Height	Latitude
Pt4	2564791.523	440370.345	18.093	N23°10'54.5173"		Pt4	2564791.523	440370.345	18.093	N23°10'54.5173'		S1	2564489.6	658469.796	25.649	N23°10'21.7701"
Pt3	2564809.012	440373.224	18.409	N23°10'55.0862		Pt3	2564809.012	440373.224	18.409	N23°10′55.0862		Pt6	84649.00	75649.000	64.000	N0°45'50.3798"
Ø S1	2564489.649	658469.796	25.649	N23°10'21.7701"		51	2564489649	658469796	25.649	N23°10'21.7701"	Ħ	Pt5	23147.000	54697.000	45.000	N0°12'32.3265"
Pt6	84649.000	75649.000	64.000	N0°45'50.3798"				Prompt		98"	Ŷ	Pt4	2564791.5	3 440370.345	18.093	N23°10'54.5173"
Pt5	23147.000	54697.000	45.000	N0°12'32.3265"		D	o you want	to delete data?	the se	lected \$5"	Ŧ	Pt3	2564809.0	12 440373.224	18.409	N23°10'55.0862
Pt4	2564791.523	440370.345	18.093	N23°10'54.5173"	<u> </u>			data:		73*	Ŷ	Pt2	2564809.9	440369.583	18.239	N23°10'55.1173"
Pt3	2564809.012	440373.224	18.409	N23°10'55.0862	_ 5				ОК	362	Ŧ	Pt1	2564798.0	440366.658	18.096	N23°10'54.7303
Pt2	2564809.985	440369.583	18.239	N23°10'55.1173"	P	Pt2	2564809.985	440369.583	18.239	N23°10'55.1173"						
	2564798.089	440366.658	18.096	N23°10'54.7303		Pt1	2564798.089	440366.658	18.096	N23°10′54.7303						
0	Cancel		De	lete		1	Cancel		De	lete		Add	Edi	t Detai	ls Im	nport

Filter:

Click Filter. Enabling the point types need to display can filter those types disabled. It

includes point types: Survey I	Point, I	nput Point	, Stake Point 🔠 .
	11:39 <	🛯 🎯 ៖ Ϙ 📾 "តែ តែ តែ Filter	
	Survey Point		
	Input Point		
	Stake Point		
		ОК	
]

Recover:

Click Recover. We can recover the points we deleted before. Select the points and click

Recover.

<	11:44	Do	* ata Recov	• • 📾 🛍 f	àl 🗩		
P	t ×	Pleas	e Input		Search		
Select All 2 Selected							
N	ome	Code	Northing	Easting	Height		
~	Pt4	calle1	2564791.523	440370.345	18.095		
~	Pt3	calle1	2564809.012	440373.224	18.409		
	Pt4	calle1	2564791.523	440370.345	18.093		
	Pt3	calle1	2564809.012	440373.224	18.409		
	S1	uuu	645.000	468.000	786.000		
	Co	ncel		Recove	r		

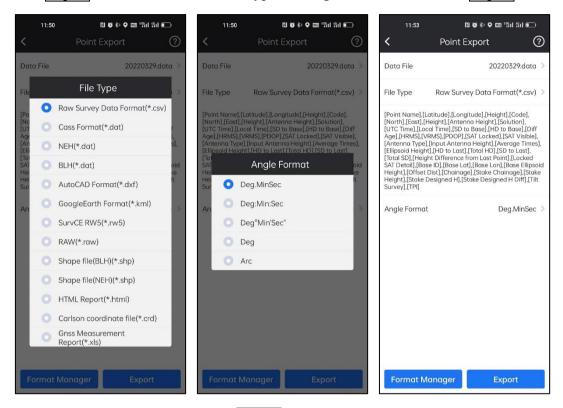
Share:

N 🕉 🕸 🗘 🚥 'ñil fil 📖 RI 🎯 🍀 🛛 💷 "All All 📖 11:48 Points Database Pt name ~ Search Pt name 🕤 Total 7 Page 1/1 Name Easting Name Northing Easting Height Latitude Northing Height SI 2564489.649 658469.796 25.649 N23°10'21.7701" Share 84649.000 75649.000 64.000 N0°45'50.3798" Pt6 F. Pt5 23147.000 54697.000 45.000 N0°12'32.3265" Ŧ Pt4 2564791.523 440370.345 18.093 N23°10'54.5173" N23°10'55.0862 Ŧ 2564809.012 440373.224 18.409 Pt3 f 2564809.985 440369.583 18.239 N23°10'55.1173" Pt2 Name:Pt4,Code:calle1,N:2564791.52 3,E:440370.345,H:18.0925197601318 36 2564798.089 440366.658 18.096 N23°10'54.7303 Ŧ Pt1 Edit Details Import

Select the point in point database, and click Share. It will share the point information with QR or TEXT.

Export:

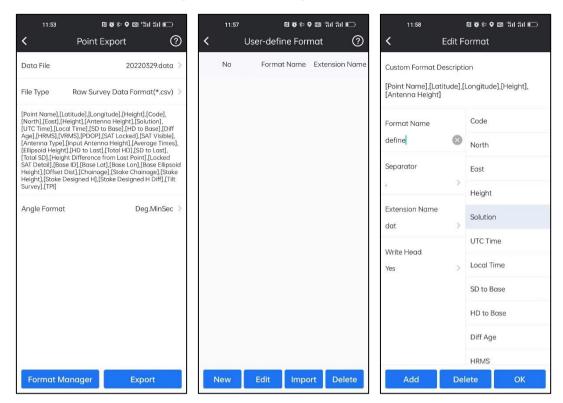
Click Export. Select the data file, file type and angle format. Then click Export.



Select the export file path and click Export.

11:52	R 6 * 9 📾 "fil fil 🗩					
< I	File Diretory					
Internal Stora 20220329/Exp	ge/SurvStar/ProjectData/ port					
Back to Root	Directory					
Back to App S	Back to App Storage Directory					
1 Back to Previo	Back to Previous Directory					
20220329.crd	20220329.crd					
20220329.csv						
20220329.xls						
File Name	20220329					
File Type	Raw Survey Data Format(*.csv)					
	Export					

We can click Format Manager to create the export file format.



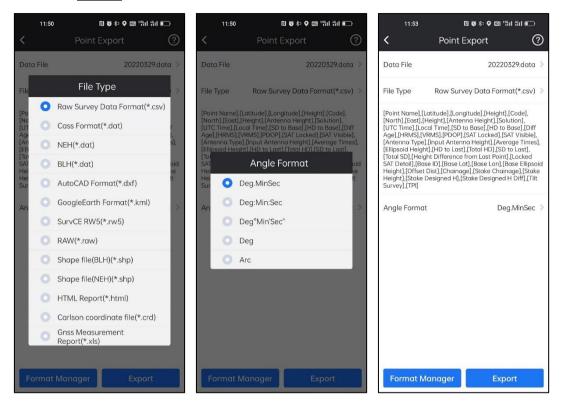
Refresh:

Click Refresh, we can apply the new coordinate parameters to the points in database.

	12	::01	N 🛇 *: 🕈 📼 'iii fii 🗩					
			Points Database					
Pt name 👻			(Elexanticat)			Search		
Total 7			Ρας	je 1/1				
N	ame	Nort	hing	Easting	Height	Latitude		
	S1	25644	89.649	658469.796	25.649	N23°10'21.7701"		
1	Pt6	8464	9.000	75649.000	64.000	N0°45'50.3798*		
围	Prompt 55'							
T T T	73 Refresh will lead to all measured points change by applying current coordinate system parameters. Sure to do Refresh? 75							
Ŷ	Cancel			ОК				
		T						
	Add Edit Details Import							

3-6 Point Export

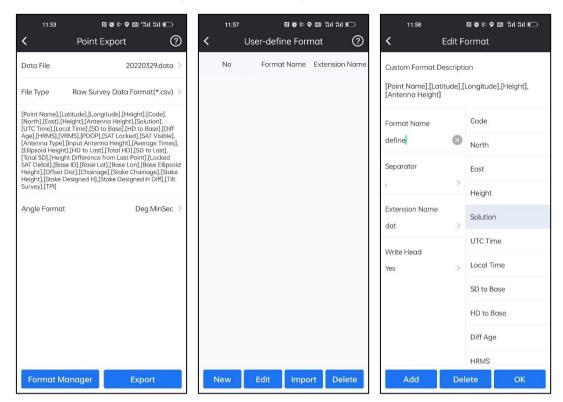
By clicking this, we can export points file. Select the data file, file type and angle format. Then click Export.



Select the export file path and click Export.

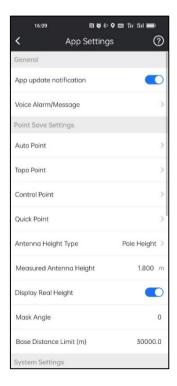
	11:52	BI 65 余 9 BB '\$11 \$11 ■				
<		File Diretory				
	Internal Storage/SurvStar/ProjectData/ 20220329/Export					
Ť	Back to Root Directory					
Ť	Back to App Storage Directory					
1	Back to Previous Directory					
	20220329.crd					
	20220329.csv	/				
Ę	20220329.xls					
File Name		20220329				
File	Туре	Raw Survey Data Format(*.csv)				
Export						

We can click Format Manager to create the export file format.



3-7 APP Settings

By clicking this, we can set the settings of SurvStar. It contains General, Point Save Settings, System Settings and Display Settings.



In General, we can set App update notification on/off. And set the Voice Alarm/Message settings. Click Voice Alarm/Message. We can set the voice alarm, volume and set the voice message on/off.

16:14 🛛 🐼 🕏	° ♥ 🚥 'ñi #il 🛑	16:14 🛛 🕅	\$÷ ♥ @ "ñı #ıl 💼	16:18	N 6 * • • 📾 🖞 📶 📖
< App Setting	gs ⑦	< Voice Alarm/M	lessage 🗸	Voice Al	arm/Message
General		Voice Alarm	V	oice Alarm	
App update notification		Stakeout limit	S	Stakeout limit	
Voice Alarm/Message	>	Point Survey limit	P	Point Survey limit	
Point Save Settings		Volume	• v	/olume	•
Auto Point	>	Voice message		/oice message	
Topo Point	>		т	TS Settings	讯飞语音引擎 >
Control Point	>			/olume	
Quick Point	>			ptions	
Antenna Height Type	Pole Height >		v	Vork mode	
Measured Antenna Height	1.800 m		C	Datalink Status	
Display Real Height			s	olution	
Mask Angle	0		11	MU Status	
Base Distance Limit (m)	30000.0		s	itake Out	
System Settings					

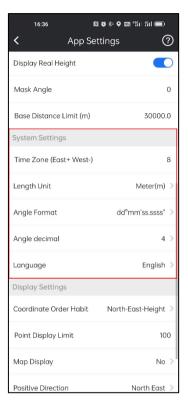
And in Point Save Settings, we can set the settings about survey. We can set limits such as Solution Limit, HRMS Limit, VRMS Limit, PDOP Limit. And other settings in Auto Point, Topo Point, Control Point and Quick Point survey. Set Antenna Height Type and measured value, Mask Angle and Base Distance Limit.

16:20 🖪 🕉 🕸	♦ 🚥 "åil #il 🗩	16:22 🖪 🕷	8: Q 🖾 🖫 🛍 💼	16:22 N	t 🛠 🗘 🖾 🖫 🗐 💭
< App Settings	s ?	< Auto Poi	nt	C Topo Pc	oint
Voice Alarm/Message	>	Solution Limit	Fixed >	Solution Limit	Fixed >
Point Save Settings		HRMS Limit	0.030 >	HRMS Limit	0.030 >
Auto Point	>	VRMS Limit	0.060 >	VRMS Limit	0.060 >
Topo Point	>	PDOP Limit	4.000 >	PDOP Limit	4.000 >
Control Point	>	Age limit (s)	2 >	Age limit (s)	2 >
Quick Point	>	Same Point Name Allowed		Same Point Name Allowed	
Antenna Height Type	Pole Height >	Default Point Name	Pt1 >	Default Point Name	Pt1 >
Measured Antenna Height	1.800 m	Point Name Increment	1 >	Point Name Increment	1 >
Display Real Height		Default Code S	ame As Last Point >	Default Code	Same As Last Point >
Mask Angle	0			Average GPS Reading Coun	t 1>
Base Distance Limit (m)	30000.0	Auto Collect Mode	Time >		
System Settings		Step Length(seconds/meters)	1 >		
Time Zone (East+ West-)	8	Rest default	ОК	Rest default	ОК

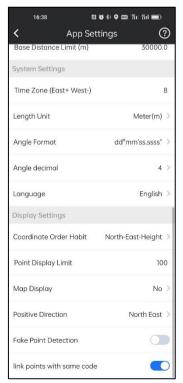
16:22	1 🗞 🕸 🛛 📾 🖏 🖏 🗩)
< Control	Point (?
Solution Limit	Fixed	>
HRMS Limit	0.030	>
VRMS Limit	0.060	>
PDOP Limit	4.000	>
Age limit (s)	2	ž
Horizontal Limit	0.020	>
Vertical Limit	0.020	>
Same Point Name Allowed	0	
Default Point Name	Pt1	>
Point Name Increment	1	>
Default Code	Same As Last Point	>
Average GDS Reading Cou	nt1	5
Rest default	ОК	

	⑧ ポ ♀ ◙ ╗ ╗ ╗
C Quick F Control Contro Control Control Control Control Contro	Point (?)
Solution Limit	Fixed >
HRMS Limit	0.030 >
VRMS Limit	0.060 >
PDOP Limit	4.000 >
Age limit (s)	2 >
Same Point Name Allowed	
Default Point Name	Pt1 >
Point Name Increment	1 >
Default Code	Same As Last Point >
Average GPS Reading Cour	nt 1>
Rest default	ОК

In System Settings, we can set the Time Zone, Length Unit, Angle Format, Angle decimal and Language.

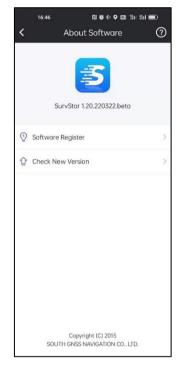


In Display Settings, we can set the Coordinate Order Habit, Point Display Limit, Map Display, Positive Direction. And set Fake Point Detection and link points with same code on/off.



3-8 About Software

By clicking this, we can check the version of SurvStar, register the SurvStar and check new version.



Software Register:

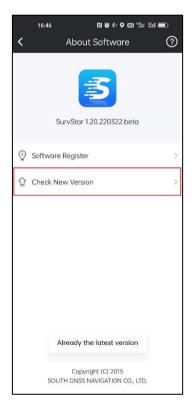
If we get the register code, we can click Software Register, and input the code in the bar, and click Activate.



We can also check the information about the Register ID, Controller SN and Expiry Data. This data is the SurvStar's using data.



We can click Check New Version to check wheather there is a newer version.



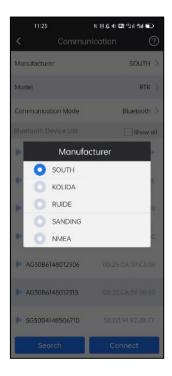
Chapter 4 Device

4-1 Communication

Click Device->Communication or tap the icon in the top to enter this interface.

09:38 C ommur	ະອຂະໝາແສ∎ nication ?
Manufacturer	SOUTH >
Model	RTK >
Communication Mode	Bluetooth >
Bluetooth Device List	Show all
DFSK012AD	C0:00:92:E5:E4:0F
AG30BB148018225	00:25:CA:5F:27:0E
AG30B6148012323	00:25:CA:59:95:5C
AG30B6148012306	00:25:CA:59:C3:06
AG30B6148012315	00:25:CA:59:9B:90
SG50B4148506710	58:D3;91:92:2B:77
AB10AB135363155	00:25:CA:47:0E:B6
Search	Connect

Set the correct Manufacturer.



Select the Communication Mode. There are four kinds of Communication Mode: **Bluetooth**: connect to receiver by Bluetooth. It is the most common used way to connect the receiver.

11:26	K 10 & 🗢 🖾 🗐 🖏 💼
	inication ⑦
Manufacturer	SOUTH >
Model	RTK
Communication Mode	Bluetooth 🗦
Bluetooth Device List	Show all
Communice	ation Mode
🔊 💽 Bluetooth	Ē
O WLAN	
Demo	8-
🔹 💽 Serial port	c
AG30B6148012306	
AG30B6148012315	
\$ SG50B4148506710	
Search	Connect

1.Click Search to detect the Bluetooth devices around us

13:49 Commur	×∞&*∞ == == = nication ?
Manufacturer	SOUTH >
Model	RTK >
Communication Mode	Bluetooth >
Bluetooth Device List	Show all
\$ SG50C1148617986	74:76:58:17:98:8D
\$ SG11C1133379938	00:80:25:DA:0D:EE
* SG50C1148618048	74:76:58:17:99:80
* 5G11C1133379925 Search	00:80:25:D9:EC:67
Stop	Connect

2. Select the receiver's serial number, and click Connect to connect receiver. The chosen device will highlight with blue.

13:54 Commur	×७६≉⊠ास∎ nication ??
Manufacturer	SOUTH >
Model	RTK 📏
Communication Mode	Bluetooth 义
Bluetooth Device List	Show all
\$1 S910C2148619394	00200003-0000
\$ SG50C1148618033	74:76:5B:17:A3:02
\$ SG50C1148618048	74:76:58:17:99:80
\$ SG50C1148618032	74:76:5B:17:A3:05
\$ SG50C1148617986	74:76:5B:17:98:BD
\$ \$910C2148619284	00:25:CA:5E:EC:1E
\$ SG11C1133379901	00:80:25:D9:EC:7B
Debug	Disconnect

3.Click Debug to monitor the data stream from the connected receiver.

14:07 N 정요용 🖽 위해 🐑 🖡
Serial Debug
Send Command
Command List >
Receive Data Sove Only Show Command
4,E,1,16,1.0,55.8966,M,0.000,M,,0002*56
\$PSIC,BSI,060732.00,2306.7208041,N,11326.211607 4,E,16.7787,0,0,0002*6F
@SIC.,GET.DEVICE.POWER_FREE.OK,90*6E @SIC.,GET.DEVICE.POWER_BATTERY2.OK,0 .00[0*2C
\$PSIC.PST.20220228,060733.00,2310.90131873,N,11 325.00058921,E,1122.231,111.205,00000,0.0000,0 0000,0.0000,55.4481,0.00001,00.0002*7A \$PGGGA,060733.00,2310.9013187,N,11325,000589 2,E,115,11.35.4481,M,0.000,M,0002*55
\$PSIC,BSI.060733.00,2306.7208041,N,11326.211607 4,E,16.7787,0,0,0002*6E
\$PSIC.PST.20220228,060734.00,2310.90151839,N11 325.00058362.E1111.2161.00188,0.0000,0.0000, 00000,0.000055.52659,0.00001,00.000247F \$GPGGA,060734.00,2310.9013184,N11325.000583 6.E1161.0.55.2659,M.0.000.M.,0002*5C
Stop Send Clear

Click Stop or Start to stop/start the data stream from the receiver.

Input the commands at the Send Command bar, and click the Send to send the commands to the receiver.

Click Clear to clear the contents of the page.

There are some useful commands in the Command List bar.



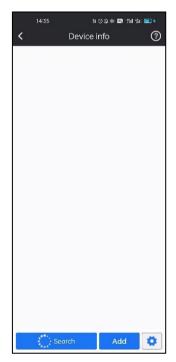
4. Break the blue tooth connection with the receiver by clicking Disconnect.

14:25	N (3 S) 🕸 📾 📶 📶 🛄
K Commu	unication 🧿
Manufacturer	SOUTH >
Model	RTK >
Communication Mode	Bluetooth >
Bluetooth Device List	Show all
N DFSK012AD	C0:00:92:E5:E4:0F
AG30BB148018225	00:25:CA:5F:27:0E
\$910C2148619394	00:25:CA:5E:B9:88
AG50B6148012323	00:25:CA:59:95:5C
AG30B6148012306	00:25:CA:59:C3:06
AG30B6148012315	00:25:CA:59:9B:90
SG50B4148506710	58:D3:91:92:2B:77
Search	Connect

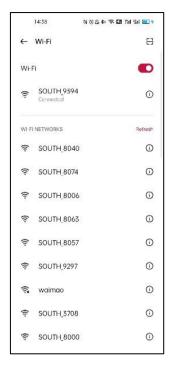
WLAN: connect to receiver by WIFI (It only supports the receiver with WIFI and WEB UI; and while connecting the receiver by WIFI, the android controller won't have access to the internet.)

on
SOUTH >
RTK >
WLAN >
>
Connect

1.Click the Device list bar to enter this page.



2. Click the settings icon to connect the WLAN of the receiver.



3.Click Add to input the IP:10.1.1.1 and port: 65432.

	14:40	សស.	\$¢;≑⊠ 111 1	al 💷 🛉
		Device i	nfo	0
10				
	IP		10.1	1.1.1
	Port		654	132
			ОК	
			UK	_
			i and	
L	Ser	arch	Add	-

4. Click this IP information and click Connect. It will connect the receiver.

Demo: It is a mode that can connect a virtual receiver which can be used to show the function of the SurvStar. Input the Coordinate of Start Point and click Start.

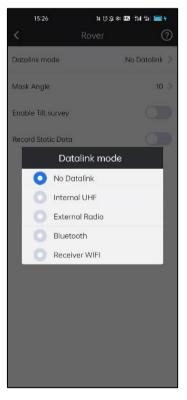
14:59 C ommu	Nອຈະໝາະແສເ≣ະ nication ?
Manufacturer	SOUTH >
Model	RTK >
Communication Mode	Demo >
Start Paint Caordinate	Q
Input Type	O BLH O NEH
Lat	N23°00'00.0000'
Lon	E113°00'00.0000'
Height	45.000 m
Direction	0.000
Speed	0.000
Sto	art

Serial port: connect to the receiver by cable (not used any more)

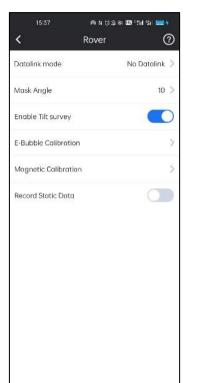
4-2 Rover Mode

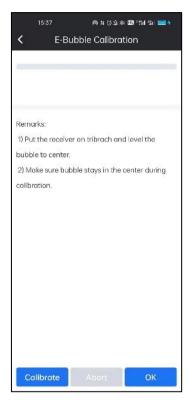
Click Device->Rover to enter the interface of Rover Mode.

Click the Datalink mode bar, it can set the different datalink mode.

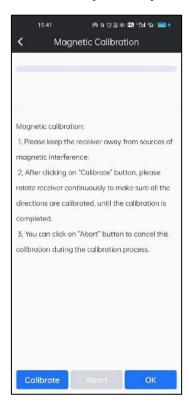


If we want to use the tilt survey, we need to enable the Tilt Survey and do the E-Bubble Calibration.





We can also do the Magnetic Calibration by this way.



Enable the Record Static Data to record the original observation data(*.sth) of the receiver.



4-2-1 Rover-No Datalink

Click the Datalink mode bar, set the receiver to Rover-No Datalink mode. This mode is used when the data link is not used at all.

15:29 K Ro	∾७३०० छ ॥। ॥ ≡ ∙ ver ??
Datalink mode	No Datalink 🗦
Mask Angle	10 >
Enable Tilt survey	
Record Static Data	

4-2-2 Rover-Internal UHF

1.Click the Datalink mode bar, set the receiver to Rover- Internal UHF mode.

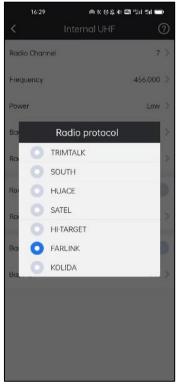
15:49	@ N () () * 🖾 (31 (31 (31 🚍)
<	Rover 🧿
Datalink mode	Internal UHF 🗦
Datalink Config	>
Mask Angle	10 >
Enable Tilt survey	
Record Static Data	

2.Click Datalink Config bar to this page, set the correct Radio Channel, Frequency, Power, Baud Rate and Radio protocol, which should be the same as the base's radio parameters.

15:52 🙉 N 정실 🕸 📶 🛍 🚃 🕴		*	16:28		@ K @ \$ * 🖾 "il 11 🖬 🚍	
< Internal U	IHF (?	<	R	adio Channel	?
Radio Channel	7	>	Ra	01		>
Frequency	456.000	5	Fre	0 2		
riedseney	400.000			0 3		
Power	Low	>	Pol	0 4		2
Baud Rate	9600	>	Bo	0 5		2
Radio protocol	FARLINK		Ra	0 6		
Radio protocol	PARLINK		RO	07		
Rodio Relay	0		Ro	0 8		- 8
Radio channel group		>	Ra	9		
				0 10		
Base Locked	0		Ba	 11 11 11 		-
Base ID	1111	>	Ba	1213		2
		· · ·		0 14		- 1
				0 15		- 1
				0 16		
				0 17		
				0 18		



16:29	<u> </u>	* 🖾 🖬 📾
	Internal UHF	?
Radio Channel		7 >
Frequency		456.000 义
Power		Low >
Baud Rate		9600 >
Radio protocol		FARLINK >
Roi 0 9	Baud Rate	
	200	>
Base Locked		
Base ID		1111 >



3. After that we can go to SAT information to check the base information.

16:31 く SAT Infi	® ଝ छ হ ≉ ⊠ ≌। ≋ 📼 ormation 🛛 📀
Detail SAT Skylo	t SNR SAT List
Height:54.8308	Height: 54.831
Direction: 0°00'00.0000	" Speed: -0.000
Accuracy	
PDOP:1.460	HRMS:0.772
VDOP:1.200	VRMS:2.116
HDOP:0.660	
Base Position	
Lat:N23°06'43.2482"	Northing: 2557053.762
Lon:E113°26'12.6964"	Easting: 442312.574
Height:16.7787	Height: 16.779
Horizontal Distance799	1.159
ID:0	

4-2-3 Rover-External Radio

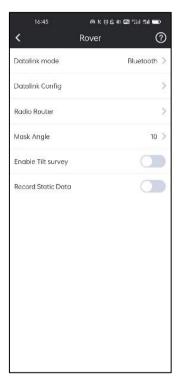
- 1. Connect the receiver to external radio.
- 2. Click the Datalink mode bar, set the receiver to Rover- External UHF mode.

16:41	ወደወይቀወንግብ የጠ 📼
<	Rover
Datalink mode	External Radio >
Mask Angle	10 >
Enable Tilt survey	
Record Static Data	

3. Config the external radio the same as base UHF.

4-2-4 Rover-Bluetooth Data Link

1.Click the Datalink mode bar, set the receiver to Bluetooth mode.



2. Click the Datalink Config bar to enter the Ntrip(Eagle) Connection-Bluetooth page.

16:47 K Ntrip(৯ ৫ ৩৪ - Eagle) Connec Bluetooth	ः 🕮 🕬 🖘 📼 :tion -
local<219:135:151	1.189:2018>	
Add	Edit	Delete
Connect	Disconnect	ОК

3.Click Add to add the Datalink. Set the correct Name, IP, Port, Username and Password.

16:55 C Datalink Cor	@ ৬ ত হ ≉ 🕮 🖫 📾 📼 hfig - Bluetooth
Select Server	Σ
Name	Network
IP	net.southgnss.com
Port	2010
Username	User
Password	Please Input 🛛 💋
Select Mountpoint	>
Mode	NTRIP(Rover) >
Auto Connect	
Concel	ОК

4.Click Select Mountpoint bar, and then click Refresh Mountpoints in the popped up window. Then click and set the correct mountpoint. Click OK.

17:00	@ K () & # 🖾 📾 📾 📾	17:05	ଭାଷ୍ତ୍≮ 🖾 ଆଲା 🗩
(Select	Mountpoint	< Datalink Co	onfig - Bluetooth
el	Input Mountpoint	Select Server	>
o Refres	h Mountpoints	Name	Network
[RTCM30]	0 m	IP	net.southgnss.com
[RTCM3X-MSM]	\odot		
[sCMRx]		Port	2010
lumbir	er	Username	User
13106050980	0 💋	Password	Please Input 🛛 💋
S4815711709426-	4		
HNZR	\bigcirc >	Select Mountpoint	[RTCM30] >
S163A421633843	5	Mode	NTRIP(Rover) >
CG30B41480070	92	Auto Connect	
WHLQ_MSM4	\bigcirc		
WHLQ_CMR	\bigcirc		
a1b2c	0		
	ок	Concel	ок

4. Click the correct IP information and click Connect, the progress bar shows the data stream.

17:06 ০০ ৫ ৫৪ ক আট গো আ 📼 Ktrip(Eagle) Connection - Bluetooth	17:06 @ ৫ ত ৪ ক আ ভা খা 📼 ≺ Ntrip(Eagle) Connection - Bluetooth
local<219135:151.189:2018>	local<219.135.151.189:2018>
Succeeded to login	
R353-1002	R0D-1002
Add Edit Delete	Add Edit Delete
Connect Disconnect OK	Connect Disconnect OK

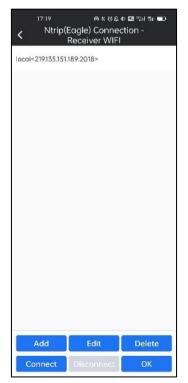
4-2-5 Rover-Receiver Network

Insert SIM card into the receiver and connect receiver with a network antenna if needed.

1. Click the Datalink mode bar, set the receiver to the Receiver WIFI mode.

17:11	<u>៣៥៥៩</u>	et 🖾 🖬 💼
<	Rover	0
Datalink mode		Receiver WIFI 🗦
Smart Connec	t Config:	>
O CORS Config		>
WIFI Password		\rightarrow
Wiselink Router		
Radio Router		>
Mask Angle		10 >
Enable Tilt survey		
Record Static Data		

2.Click the CORS Config bar to enter the Ntrip(Eagle) Connection-Receiver WIFI page.



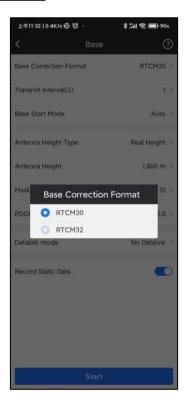
3. Click Add to add the Datalink. The steps are same as the Bluetooth Datalink.

4-3 Base Mode

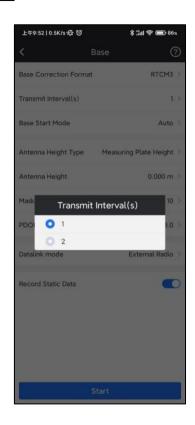
Click the Device-Base enter interface of Base mode.

上午11:18 0.4K/s 🔗 🗇	参 🏦 📚 🗈 61x
К В	ase
Base Correction Format	RTCM3 >
Transmit Interval(s)	1 >
Base Start Mode	Auto 🗦
Antenna Height Type	Measuring Plate Height >
Antenna Height	0.000 m >
Mask Angle	10 >
PDOP	3.0 >
Datalink mode	External Radio >
Record Static Data	
s	tart

1.Click the Base Correction Format bar of Base, set the difference scheme for receiver.



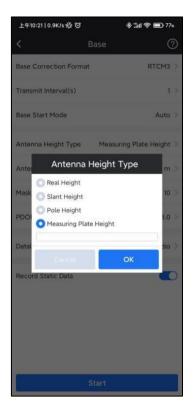
2.Click the Transmit Interval(s) bar to set the time of data transmit interval.



3.Click the Base Start Mode bar to set mode of base start. Base start mode contains Manual, Repeat Base coordinate, Auto and Start Base Smart. Click OK.

<		\$ 📶 🗢 🗩 87x		1K/s & O	*111 🕿 📼
	Base Start Mode	• ⑦	<	Base Start Mode	
ase Start Mod	e	Auto >	Base Start	Mode	A
				Base Start Mode	•
			0	Manual	
			0	Repeat Base Coordin	iate
			0	Auto	
			0	Start Base Smart	

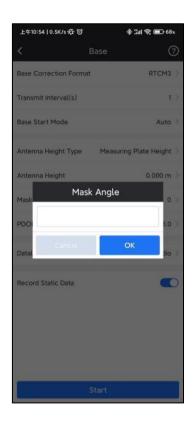
4.Click the Antenna Height Type bar to set antenna height type of receiver. The type contains Real Height, Slant Height, Pole Height and Measuring Plate Height. Click OK.



5.Click the Antenna Height bar and input the antenna height then click OK.

上午10:42 0.2K/s 疫 🕅		🕸 🖫 📚 💼 73 x
<		0
Base Correction Form	at	RTCM3 >
Transmit Interval(s)		1.5
Base Start Mode		Auto 🤉
Antenna Height Type	Measuri	ng Plate Height 🔌
Antenna Height		0.000 m >
Anter	nna Heigh	t o >
PDO		3.0 >
Datal		ок dia >
Record Static Data		
	Start	

6.Click the Mask Angle bar and input the receiver mask angle then click OK.



7.Click the PDOP bar and input PDOP value then click OK. The usual default value is 3.0.

上午11:10 7.7K/s		🚸 🏦 🧟 🗊 63x
<		0
Base Correction Form	at	3
Transmit Interval(s)		1.5
Base Start Mode		
Antenna Height Type		Real Height >
Antenna Height		0.000 m >
Mask	PDOP	0 >
PDOI		3.0 >
Datal		ОК
Record Static Data		
	Start	

4-3-1 Base-No Datalink

Click the Datalink mode bar, set the receiver to Base-No Datalink mode. This mode is used when the data link is not used at all.

下午2:	36 0.0K/s 妃 ⑦	参 🏭 😤 🖽 72 x
<		0
Base C	Correction Format	RTCM3 >
Transn	nit Interval(s)	1.5
Base S	start Mode	Auto 🤉
Anten	na Height Type Measu	ring Plate Height 🗦
Ante	Datalink moo	le mo
Mask	O No Datalink	10 >
PDO	 Cellular Network Internal UHF 	3.0 >
Datal	External Radio	nk 🤉
	Bluetooth	
Record	d Static Data	•
	Start	

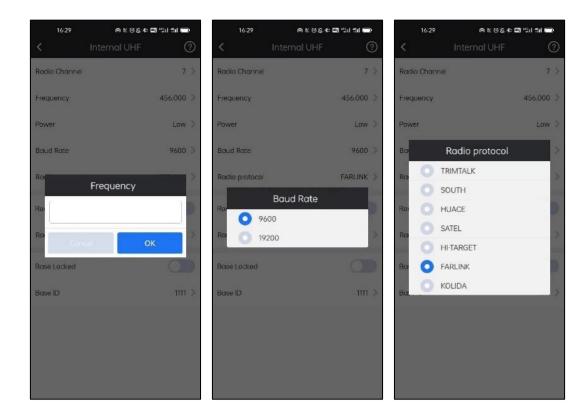
4-3-2 Base-Internal UHF



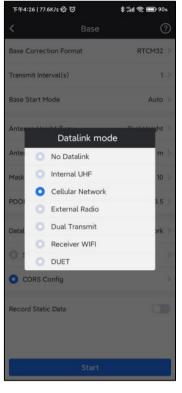
1.Click the Datalink mode bar, set the receiver to Base-Internal UHF mode.

2.Click Datalink Config bar to this page, set the correct Radio Channel, Frequency, Power, Baud Rate and Radio protocol, which should be the same as the base's radio parameters.

15:52 🔎 ង ដ	9 🕸 🖾 Shi Shi 💼 🕇	16:2	8 @KŬ&≮⊠":	al ttal 📼
< Internal U	HF ⑦	<	Radio Channel	3
Radio Channel	7 >	Ra	1	
-	456.000 >	0	2	_
Frequency	456.000 /	Fre O	3	
Power	Low >	Pot O	4	- 1
Baud Rate	9600 >	Во	5	
		0	6	
Radio protocol	FARLINK >	Ra O	7	
Rodio Relay		Roj	8	
Radio chonnel group	>	Ray	9	- 1
Radio channei group	~	Ka O	10	
Base Locked		Ba	11	
Base ID	1111 >	Ba	12	
odse ID	ann 2	bu O	13	
		0	14	
		0	15	
		0	16	
		0	17	
		6	18	



4-3-3 Base-Cellular Network



1.Click the Datalink mode bar, set the receiver to Base-Cellular Network mode.

2.Click the Datalink Config bar to enter the Ntrip(Eagle) Connection-Cellular Network page.

下午2:36 0.1K/s ⁄2	6	🚸 📶 😤 💷 74x
	Eagle) Connec Cellular Networ	
Network<219.135		
Add	Edit	Delete
Connect	Disconnect	ОК

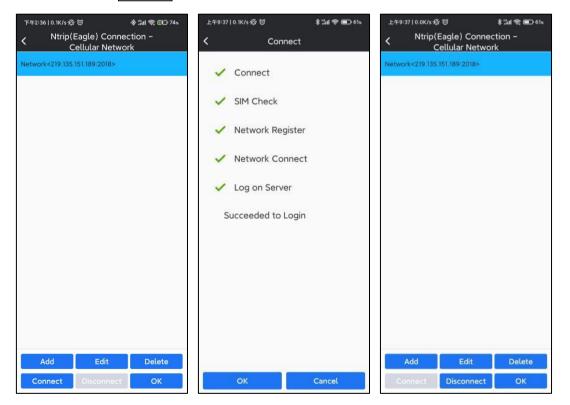
3.Click Add to add the Datalink. Set the correct Name, IP, Port, Username and Password. Click the Read from Module on lower left corner can auto to obtain IP, Port, Username and Password. User can click Select Mountpoint Mode APN and Select SIM card bar to set a correct Select Mountpoint, Mode, APN and Select SIM Card of cellular network. Once set, click OK.

下午4:40 0.1K/5 安 ⑦	下午4:34 0.6K/s 经 贷	\$ 🏭 余 🗩 87x	下午4:34 0.8K/s 党 Ö	非計会 回 87x
C Datalink Config – Cellular Network	C Datalink Config Network		C Datalink Config – Network	
Select Server >	Select Server	2	Select Server	
Name Network	Name	Network	Name	Network
IP 219.135.151.189	IP	219.135.151.189	IP	219.135.151.189
Port 2018	Port	2018	Port	2018
Username 0262	Username		Username	0262
Password ····	Passy Select Mount	tpoint	Passy Mode O NTRIP(Rover)	•••
Select Mountpoint 0800_MSM4 >	Selec	and the second sec	Selec O Eagle mode(Base	e) M4.5
Mode NTRIP(Rover) >	Mode	OK er)	Mode C TCP/IP	er) >
APN	APN	>	APN	
Select SIM card External SIM >	Select SIM card	External SIM >	Select SIM card	External SIM 🗧
	Read from Module Can \$ 201 € ■ 87* onfig – Cellular etwork		Read from Module Canco کتاب کی کتاب Read from Module Canco State Cancol Read from Module Cancol Read from Module Cancol State Cancol S	OK
Select Server	ð.	Select Server	\$	
Name	Network	Name	Network	
IP .	net.southgnss.com	IP	net.southgnss.com	
Port	2010	Port	2010	
Usen	APN User	Username	User	
Passy Server	CMNET	Passi Selec	t SIM card 🧖	
Selec Password	CARD (23)	O Internal : Selec	23 >	
Mode	CARD ar) >	O External Mode	SIM NTRIP(Rover)	
APN	OK Serve ET	APN	CMNET >	
Select SIM card	External SIM >	Select SIM card	External SIM >	

4.Click Edit bar to edit Cellular Network. Enter the Datalink Config-Cellular Network page, it's similar to Add function.

上午9:20 0.0K/s 经 🗑	\$ 📶 📚 🗊 67x
	onfig – Cellular
Ne	etwork
Select Server	>
Name	Network
IP	219.135.151.189
Port	2018
Username	0262
Password	
Select Mountpoint	0800_MSM4 >
Mode	NTRIP(Rover) >
APN	>
Select SIM card	External SIM $>$
Read from Module	Cancel OK

5.Once set, click Connect bar to connect cellular network.



4-3-4 Base-External Radio

- 1. Connect the receiver to external radio.
- 2. Click the Datalink mode bar, set the receiver to Base-External Radio mode.



4-4 Static Mode

Click the Device interface to enter Static Mode.

上午11:01 0.0K/s 级 ③	\$ Sull 会 🚍 79x
< s	itatic
Static File Name	6723 >
Recording Interval	1>
Antenna Height	Pole Height,1.800 m 🗦
Mask Angle	10 >
PDOP	3.5 >
Auto Record	
	Start

1.Click the Static File Name bar to set the name of static file.



2.Click the Recording Interval bar to set the static data collect interval time(s).

上午11	27 0.01	(15월 Ö		\$211 Q	💼 70 x
Static i	File Na	me			6723 >
Reco		Record	ding Inte	erval	1 >
Ante	0	0.02			m 2
Ante	0	0.05			m >
Mask	0	0.1			10 >
PDO	0	0.2			3.5 >
	0	0.5			
Auto	0	1			
	0	2			
	0	5			
	0	10			
	0	15			
	0	30			
	0	60			
	0	300			
	0	600			
			Start		

3.Click the Antenna Height bar to set the Real Height, Slant Height, Pole Height, and Measuring Plate Height. Click OK.



4.Click the Mask Angle bar and input the receiver mask angle then click OK.

上午11:27 0.0K/s 🔗 🗑	\$ 📶 🙊 🗩 70 s
Static File Name	6723 >
Recording Interval	1 >
Antenna Height	Pole Height,1.800 m >
Mask Angle	10 >
PDOP	3.5 >
Auto	ısk Angle
	Start

5.Click the PDOP bar and input PDOP value then click OK. The usual default value is 3.0.



6.Click Static mode auto collect data when open the Auto Record.

下午4:15 0.0K/s 🕸 🖯		🕸 🖬 🖓 📶 🕘 🖓 S S S
<	Static	
Static File Name		1718 >
Recording Interval		1>
Antenna Height M	easuring Plate	Height,0.000 m 🤉
Mask Angle		10 >
PDOP		3.0 >
Auto Record		
	Stop	

4-5 Device Info

By clicking this, we can check the information of the device. It includes Receiver Model, Receiver SN, Work Mode, Datalink, L1 Offset, Antenna Radius, Temperature of the device, Battery Status, Memory, Receiver Firmware Version, Expiry Data, OEM Board SN, OEM Board Firmware Version, UHF Module SN and UHF Module Firmware Version.

17:15 関 🕯	o & *• O ໝ °#il #il 🛲
< Device	e Info 🛛
Receiver Model	YF1
Receiver SN	Q911C3148626533
Work Mode	Rover
Datalink	Bluetooth
L1 Offset	0.0776(m)
Antenna Radius	0.0000(m)
Temperature	38.5℃
Battery Status	A:80% B:0%
Memory	3.72GB/3.99GB
Receiver Firmware Ver	1.09.211222.R911PY
Expiry Date	20220521
OEM Board SN	0908495748626533
OEM Board Firmware Ver	609A9-21AT6-1

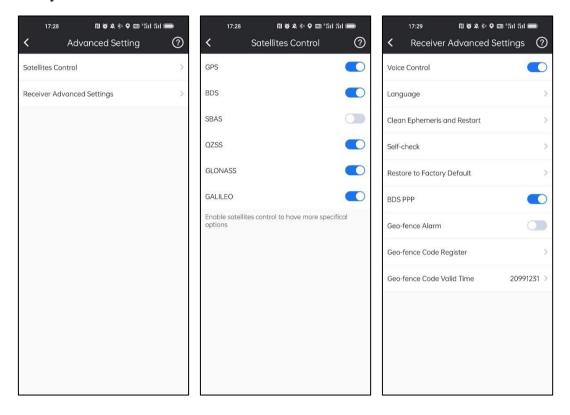
4-6 Device Register

By clicking this, we will enter to Device Register page. In this page, we can check the device registration information and register device. Click $\boxed{\text{Copy}}$ will copy the receiver SN. Input the registration code in the bar, and click Register, then the device will be registered. We can also click $\boxed{\text{SCAN}}$ to scan the QR code to register.



4-7 Advanced Setting

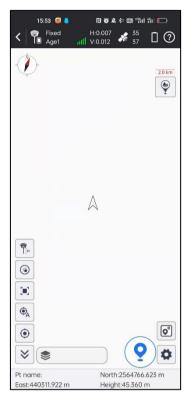
By clicking this, we will enter to Advanced Setting page. In this page, we can control weather track one satellite system and set the settings of the receiver. We can set the Voice of the device, Language of the device, Clean Ephemeris, Self-check, Restore to Factory Default and so on.



Chapter 5 Survey

5-1 Point Survey

By clicking this, we can enter to the point survey page.



In this page, the icons in upper toolbar describe as follows:



: Close/exit Point Survey page.



Receiver operation mode, pressing to jump to Base/Rover/Static setting page.



: Receiver signal.

Receiver positioning information, pressing to jump to satellite positioning information page.



: Receiver battery power.

Solution status: includes single, float, differential and fixed.

Age1: current differential delay is 1.

e.g., Single, 0: current solution is single, and differential delay is 0.

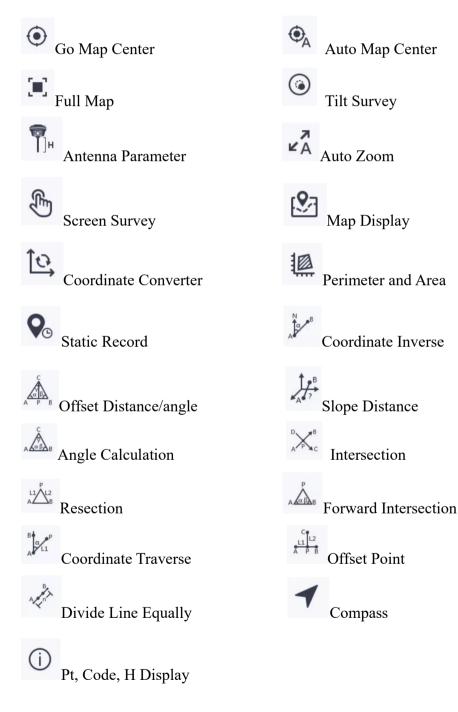
Fixed, 1: current solution is fixed, and differential delay is 1.

H: HRMS, the value represents the horizontal accuracy of current point.

V: VRMS, the value represents the vertical accuracy of current point.

35/37: current number of satellites which used to solution, and the total tracked satellites number.

The icons in left toolbar describe as follows:



The icons in right toolbar describe as follows:

Coordinate point database. Points collected by SurvStar are stored in coordinate point database.



Record and Display Settings.

Topo/Control/Quick/Auto Point: settings for display limit of collected points on the basis of set point type that defaults to topo points. It can be Topo/Control/Quick/Auto.

14:31 N & ★ * • Image: ** ✓ Record and Display Setting		14:34 N & * ● < Record and Display Set	
Topo Point Information	Tool Bar	Control Point Information	Tool Bar
Solution Limit	Fixed >	Solution Limit	Fixed >
HRMS Limit	0.030 >	HRMS Limit	0.030 >
VRMS Limit	0.060 >	VRMS Limit	0.060 >
PDOP Limit	4.000 >	PDOP Limit	4.000 >
Age limit (s)	2 >	Age limit (s)	2 >
Same Point Name Allowed		Horizontal Limit	0.020 >
Default Point Name	Pt1 >	Vertical Limit	0.020 >
Point Name Increment	1 >	Same Point Name Allowed	
Default Code Same As L	ast Point >	Default Point Name	Pt1 >
Average GPS Reading Count	1.>	Point Name Increment	1 >
Cancel Default settings	ОК	Default Code Same Cancel Default settings	As Last Point >

14:35 🛛 🗑 🎕 🍀 🗣 📾 ≺ Record and Display Set		14:35 🛛 🗃 🎗 🍀 🕈	
Quick Point Information	Tool Bar	Auto Point Information	Tool B
Solution Limit	Fixed >	Solution Limit	Fixe
HRMS Limit	0.030 >	HRMS Limit	0.0
VRMS Limit	0.060 >	VRMS Limit	0.04
PDOP Limit	4.000 >	PDOP Limit	4.00
Age limit (s)	2 >	Age limit (s)	
Same Point Name Allowed		Same Point Name Allowed	
Default Point Name	Pt1 >	Default Point Name	F
Point Name Increment	1 >	Point Name Increment	
Default Code Same As	Last Point >	Default Code Same	As Last Poi
Average GPS Reading Count	1 >	Auto Collect Mode	Tin
Cancel Default settings	ОК	5 Cancel Default setting:	5 OK

Information: it can select the displayed information in the status bar at interface bottom.

Select an item in the to be selected list, then click to move this item to the Display item list. In the same way, select an item on the Display item list, and click to move this item to the to be selected list. If click Default settings, the default items will be added to the Display item list, including Pt name, North, East, Height.

14:42	R 6 2	1 🕸 🗘 📾 1511 1511 🗊	14:46	N 6	\$ *: • 🖬 "fill fill 🗊
< Record of	and Displ	ay Settings	< Record	l and Disp	lay Settings
Auto Point	Informati	on Tool Bar	Auto Point	Informat	ion Tool Bar
Display item		To be selected	Display item		To be selected
Pt name		Code	Pt name		Direction
North		Longitude	North		Speed
East		Latitude	East		Time(s)
Height		Elevation	Height		Base Dist
		Antenna Height			PDOP
		Direction			HDOP
		Speed			VDOP
		Time(s)			Record Mode
		Base Dist		4	Tilt angle
		PDOP			Projection Azimuth
		HDOP			Realtime Radius
Cancel	efault set	tings OK	Cancel	Default set	ttings OK

Tool Bar: settings what function keys to display in left toolbar in Point Survey interface.



?: Collect point coordinates: this icon changes along with open/close status of tilt

survey. Open tilt survey, it will change to

. And if the tilt mode available, it will



: set the point type (Topo Point, Control Point, Quick Point, Auto Point). The following introduces collecting process of all point types.

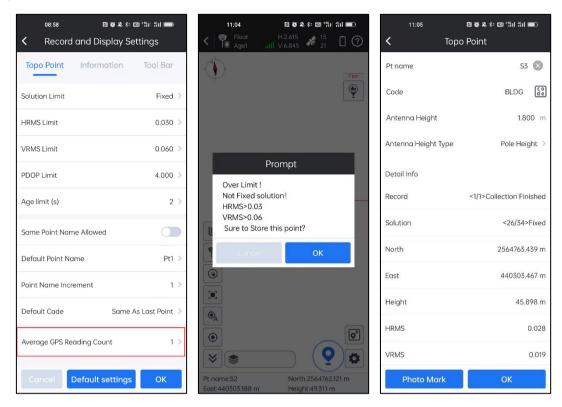
Topo points:



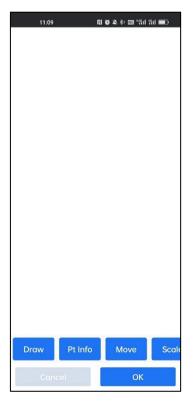
The "Average GPS Recoding Count" in record options refers to the number of points which could be consecutive recorded. It means that it could collect one point every time

and this point should meet record limit. When you click 🕐 to record the topo point, if the measured point does not meet record limit, there will be a prompt message. If the measured point meets record limit, the measured point info (HRMS, VRMS, delay, PDOP, date and time) will be displayed in the screen. Then click OK to save the topo

point.



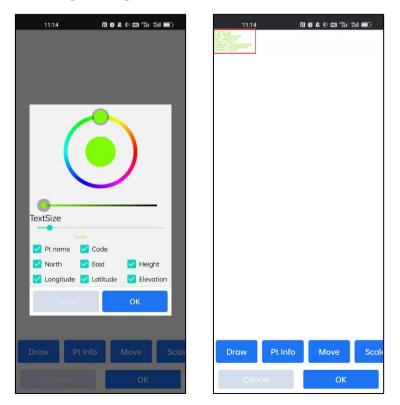
Click Photo Mark, we can make information note on collected points, such as documents, pictures and graphs



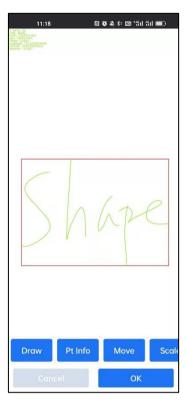
Click Draw, we need to choose the color of the draw line firstly. And we can draw the shape we need.

11:10 🕅 🏟 🎗 នំ 🚥 🛱៧ 💼	11:12	R 🏾 🔺 🍀 📼 🕮 👘 💼
LineWidth Concel OK	Sk	1ap C
Cancel OK		Complete

Click Pt Info, we can label the photo information. We can select to on/off Pt name, Code, North, East, Height, Longitude, Latitude and Elevation.



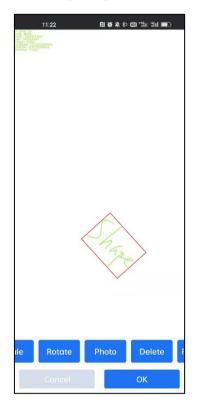
Click Move and select any drawn shape, we can move it.



Click Scale and select any drawn shape or photo, we can scale it.

	11:20	RI (6 % 8:	🚥 °SH SH 🔲	
and the state				
		Shap	e	
ıfo	Move	Scale	Rotate	
			ОК	

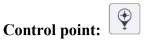
Click Rotate and select any drawn shape or photo, we can rotate it.



Click Photo and select any drawn shape or photo, we can directly invoke system camera to take a picture.

Click Delete and select any drawn shape or photo, we can delete it.

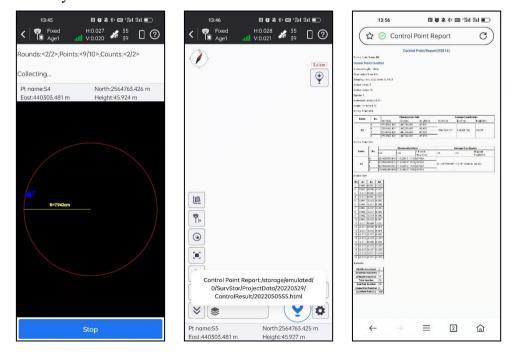
Click RollBack, it will roll the previous operation back.

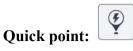


We can set the control point surveyed parameters in Record and Display Settings.

11:40 № 8 C Record and Displa	🔉 रू 📾 'संग स्था 💷 ay Settings
Control Point Information	on Tool Bar
Horizontal Limit	0.020 >
Vertical Limit	0.020 >
Same Point Name Allowed	
Default Point Name	Pt1 >
Point Name Increment	1 >
Default Code S	iame As Last Point >
Average GPS Reading Count	1 >
Survey Point Count per Round	d 10 >
Survey Round	2 >
Store after fixed beyond	20 >
Cancel Default sett	ings OK

Click (?) and wait for 20s delay for fixed solution, then it starts to collect data. It records one point every 1s, continuously records 10 points and collects 2 sets of 10 points (the above data is taken for example according to the control points record settings). When collection is finished, it will output a Control Point Report automatically.





When you collect quick point, if the measured point meets record limit, then it will finish collection after prompt voice, and there will not show storage page.



Click (?) and set record parameters, click OK to start collection. Click (?) again to end the auto points recording.

14:12	R 6 & *: III *11 III 🗩	14:13	RI 🛛 🛠 🛠 🚥 "#11 #11 🗩
< Auto	o Point	<	H:0.024 35 111 V:0.014 38 38
Pt name	516 🛞		1.8 km
Code	BLDG de	v	Ş
Antenna Height	1.800 m		
Antenna Height Type	Pole Height >		
Detail Info			
Record	<1/1>Collection Finished	Contract	
Solution	<35/38>Fixed	CollectPoint	:Counts:10,CurrentPoint:S25.
North	2564763.575 m	T.H	
East	440303.464 m		
Height	46.139 m	• •	
HRMS	0.023	© A	୕ୖ
VRMS	0.012	× 🔹	?
Photo Mark	ОК	Pt name:S25 East:440303.463 n	North:2564763.572 m n Height:46.142 m

5-2 Detail Survey

By clicking this, it will enter to detail survey page. Its upper toolbar information is same as that of Point Survey. Detail Point is a simplified point survey mode, which is suitable for rapid and continuous coordinate survey.

Click Settings and set recording limit and click OK to return to detail survey page. to

Set Pt name, Code, Antenna Height and Antenna Height Type, click 😢 to complete point collection.

14:34	R 🏽 🛦 🕸 🖓 👘 🛛 🖓 🕅	14:29 El 🏹 🖇	: 💷 '4
Fixed H I Age1 III V	$\frac{1:0.000}{1:0.000}$ $\overset{32}{\checkmark}$ $\frac{32}{40}$ \square $\textcircled{2}$	< Device Setting	js
2544887.015 m	B: N22°59'59.9942"	Solution Limit	
397473.610 m	L: E112°59'59.9926"	HRMS Limit	
42.900 m	H: 42.900	VRMS Limit	
name	S33	PDOP Limit	
ode	BLDG	Age limit (s)	
ntenna Height	1.800 m	Same Point Name Allowed	
ntenna Height Type	Pole Height >	Default Point Name	
llect Progress		Point Name Increment	
		Default Code Same	e As L
		Average GPS Reading Count	
	?		
Set	tings	Cancel	OI

5-3 Point Stakeout

Point stakeout is the process of inputting target coordinate in software and stakeout in field. By clicking this, we will enter to points database. Select any point, and click OK. Then we will enter to the point stakeout page.

		4:53			°%il #il 🗊
<		Poir	nts Datak	base	
F	^o t nam	ne v Ple			Search
Тс	tal 38	Pi	age 1/1		
1	Name	Northing	Easting	Height	Latitude
Ŧ	S32	2544887.165	397473.658	42.900	N22°59'59.9990
Ŧ	S31	2544887.116	397473.742	43.000	N22°59'59.9975
Ŧ	S30	2544887.462	397473.578	43.000	N23°00'00.008 7*
Ŷ	S29	2544887.354	397473.848	42.900	N23°00'00.005 2*
Ŧ	S28	2564763.573	440303.463	46.134	N23°10'53.6001"
Ŧ	S27	2564763.572	440303.462	46.136	N23°10'53.6001*
Ŧ	S26	2564763.575	440303.462	46.136	N23°10'53.6002
Ŧ	S25	2564763.572	440303.463	46.142	N23°10'53.6001"
Ŧ	S24	2564763.572	440303.461	46.134	N23°10'53.6001"
Ŧ	S23	2564763.572	440303.459	46.142	N23°10'53.6001"
Ŷ	S22	2564763.568	440303.456	46.147	N23°10'53.6000
Ŧ	S21	2564763.575	440303.462	46.146	N23°10'53.6002
Ŷ	S20	2564763.575	440303.460	46.138	N23º10'53.6002
	Add	Edit	Detai	s	ок

Arrows in left bar describe as follows:

To Forward/Backward: distance that receiver needs to move Forward/Backward from current position to stakeout point. To Forward arrow shows up and to Backward arrow shows down.

To Left/Right: distance that receiver needs to move Left / Right from current position to stakeout point. To Left arrow shows left and to Right arrow shows right.

Fill/Dig: dig in stakeout point position. If the value is positive, perform excavation; if not, perform fill. If current height is higher than stakeout point arrow shows down. If current height is higher than stakeout point arrow shows up.

- : open/close stakeout voice prompt.
 - : hide or show left arrow bar.

: switch compass mode or distance mode.

This is the distance mode.

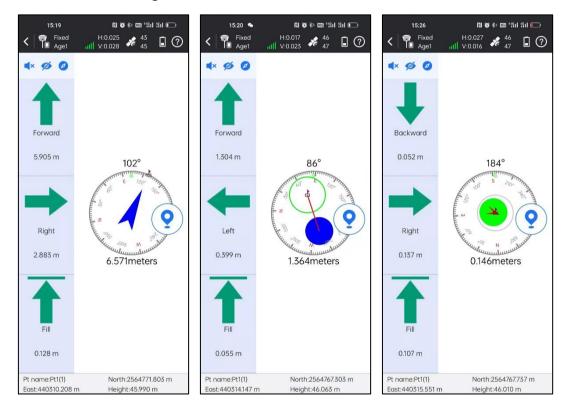
Ø



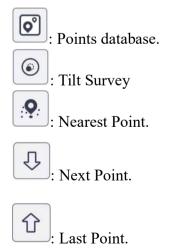
There are two states for compass mode.

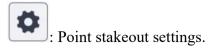
State 1: Red flag represents target point, blue arrow represents moving direction from current receiver position to stakeout point, green arrow represents the direction from the collector pass and words below represents distance to target point.

State 2: In gray/green circle the red flag represents stakeout target, and blue circle represents receiver position. When stakeout distance doubles Prompt Range, it would change state 1 into state 2; when stakeout distance meets Prompt Distance, state 2 blue circle would turn into green.



The icons in side toolbar describe as follows:





It can set stakeout settings, including Prompt Distance, Stake Limit, Display Information (Not Display, Point Name, Code), and Reference Direction (Forward, North); settings for Topo Point, Inform and Tool Bar are the same as that of Point Survey. Click Default settings and it can restore the changed settings.

16:32 🖪 🔊	▲ 参 國 部 部 1 m ■ * tion Settings ⑦
Stakeout Topo Point	Inform Tool Bar
Store Point by name of	Stake Point 🚿
Code	No Code >
Prompt Distance (meters)	1.000 >
Auto Zoom	
Auto Stake to Nearest Point	
Auto Mark Staked Point	
Stake Limit (meters)	0.020 >
Display Info	Point Name >
Reference Direction	Forward (Left, right) >
Voice message	>
Cancel Default se	ttings OK

Prompt Distance: taking stakeout point as center of a circle and drawing three concentric circles with radii are multiples of 1, 2 and 3 times of the prompt range, area covered by these three concentric circles is prompt range.

Point stakeout steps:

1. Select a point to stakeout in the points database, then click \overrightarrow{OK} to enter points stakeout page. Red flag is target stake point. Circle is current position of receiver. Arrow is direction indicator, indicating the direction of current receiver. When the arrow direction is same with the direction to the target point, please move in this direction, then you can reach the target point.

2. According to left status bar, move from the current point to the stakeout point, and excavate or fill the soil according to the height difference of the elevation.

3. When current point is within prompt range, there will be three concentric circles, which indicate it enters precise stakeout.

4. After you reach the stakeout point, please stake it.

5-4 Line Stakeout

Line stakeout is the stakeout of designed line, including line mileage, left and right offset and elevation control within line. By clicking this, we will enter to Line List. Click Add, we can add the designed line with Line Name, the Start Point, End Point and Start Chainage. We can also import line file(*.SL).

1	7:01	RI (0 &)	}: œ1 *%il :	tul 🧰 🖌	17:01	1048805	ıl fiil 🧰 🕈	17:05	🛯 🏹 🕸 🕸 📼 "Sul Sul 💼 4
<	l	_ine List		0	<	Line Parameters		<	File Import
Total 1	Page	1/1			Line Name		Line2	File Type	Line File
Name	Start Pt N 2564798.089	Stort Pt E	H 18.096	End Pt N 2564809.98	Start Chainag	qe	0.000 m	File Type	Line library(.SL)
Ciner	2204/40/004	440300.030	10.090	220400434	Start Point	• 20	9 0	[Line Name], [Start Pt N], [Start Pt E], [H], [End Pt N], [End Pt E], [H], [Mileage], [Start Point Name], [End Point Name]	
					Start Point No	ame			
					Northing		0.000 m		
					Easting		0.000 m		
					Height		0.000 m		
					End Point		? °		
					End Point Na	me			
					Northing		0.000 m		
					Easting		0.000 m		
					Height		0.000 m		
Add	Edit	Delet	e Ol	<		ОК			ОК

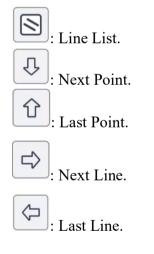
Select any line, and click OK. We can set the settings of stake, it including Chain Pile Stake On/Off, Auto Stake Nearest Point On/Off, Mileage, Range, Calculating Method and Stake interval. Click OK.

	lox*∞≋≋ii≋il≡>* Settings ??
Chain Pile Stake	
Auto Stake Nearest Point	
Mileage	0.000 m
Range	0.0000~12.2503
Calculating Method	By Integer Stake No 🗦
Stake interval(m)	2 >
C	ж

Then we will enter to the line stakeout page.

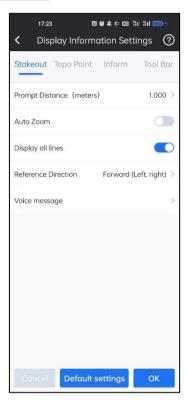


The icons in side toolbar describe as follows:



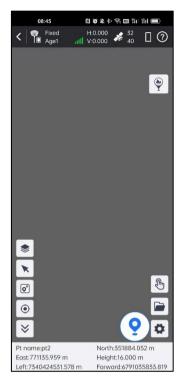


It can set line stakeout settings, including Prompt Distance, Reference Direction (Forward, North); settings for Topo Point, Inform and Tool Bar are the same as that of Point Survey. Click Default settings and it can restore the changed settings.



5-5 CAD

CAD is mainly used to stakeout lines in the existing CAD graphics. By clicking this, we can enter to the CAD page.



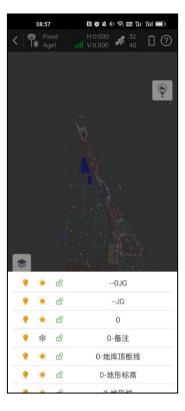
The icons in side toolbar describe as follows:



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Cancel	ОК



We can manage and check the CAD layer by clicking this icon.



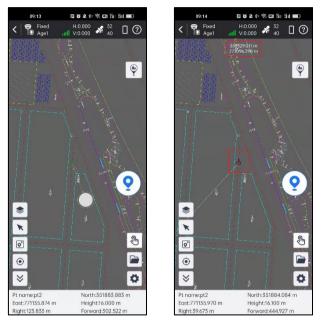
: Layer switches, controlling layer display.

: Layer freeze, cannot edit or modify after freezing.

: Layer locking, cannot select after locking.



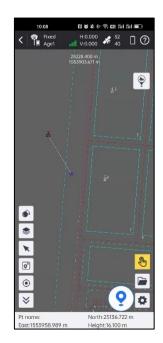
By clicking this, there will be an arrow when touch and hold to move on the screen. The place indicated by the arrow is the place of the target point. It can also show the coordinates of this point in the top of the page.

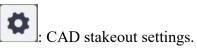


F

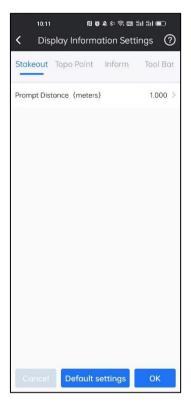
: Select CAD.

By clicking this, we can select a surface feature in project. And it will be a target surface feature. The point closest to the selected feature is used as the target point.





It can set CAD stakeout settings, Prompt Distance; settings for Topo Point, Inform and Tool Bar are the same as that of Point Survey. Click Default settings and it can restore the changed settings.



5-6 PPK Survey

PPK (Post Processed Kinematic) is a post-processing differential technology to obtain centimeter level positioning accuracy information. Compared with RTK (Real Time Kinematic) positioning, PPK can record the data of mobile terminal and base station respectively for post-processing kinematic, so it is not limited to the communication link and protocol between base station and mobile station. It is also called Stop & Go. 1.We need to set a base station as static mode firstly. And then we start it with another device as rover mode.

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Epochs Time(s)	
Pt name	P1 🛞
Code	
Antenna Height Type	Pole Height >
Antenna Height	1.800 m
Record Static Data	
Sampling Time	10 >
Minimum Satellites	15 >
PDOP Limit	3 >
Cancel Recover	Start

2.Set the Pt name, Code, Antenna Height Type, Antenna Height, Record Static Data On/Off, Sampling Time, Minimum Satellites and PDOP Limit. Before starting work, we need to take about 30 seconds standing to initialize the device, for the higher accuracy.

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Epochs Time	e(s)
Pt name	Р1 🛞
Code	
Antenna Height Type	Pole Height >
Antenna Height	1.800 m
Record Static Data	
Sampling Time	10 >
Minimum Satellites	15 >
PDOP Limit	3 >
Cancel Recover	Start

3. Put the device in the first point and click Start. It will collect this point and write the information of this point into the record file. We can click Stop to stop it.

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	ne(s) 5
Pt name	pt3
Code	
Antenna Height Type	Pole Height 🗦
Antenna Height	1.800 m
Record Static Data	
Sampling Time	10 >
Minimum Satellites	15 >
PDOP Limit	3 >
Cancel Recover	Stop

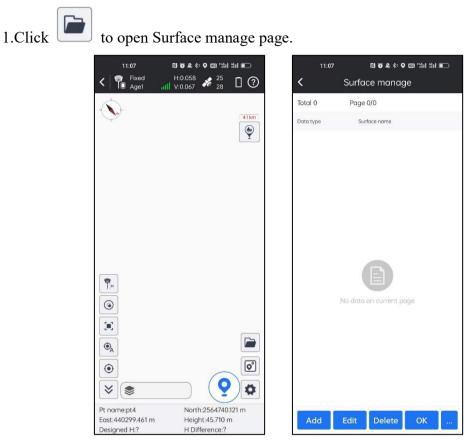
4. After collecting the point, we can click Save to save the point and then go to the next point.

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Epochs	10	Time(s)	10
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Antenna Hei	ght		1.800 m
Record Static	: Data		
Sampling Tim	ne		10 >
Minimum Sat	tellites		15 >
PDOP Limit			3 >
	Recover	Start	Save

5. Repeat these steps until the project done.

5-7 Elevation Control

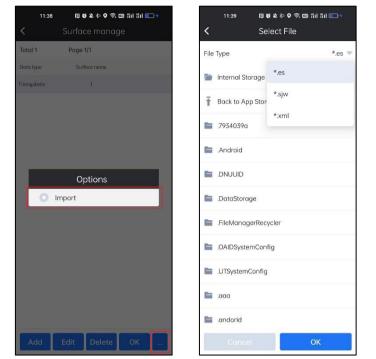
Elevation control can calculate the design height of points within the range according to the design plane parameters, which is conducive to site leveling and earthwork calculation in the project.



2.Add/Import Surface.

There are two ways to add/import surface.

Import:



Click ... and click Import, select the surface file (*.es/*.sjw/*.xml) and click OK.

Add:

Click Add, select the Data Type to build elevation plane. We can use three ways to build it: one point with two slope, two points with one slope and Triangulation.

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urface name		Surface nam
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One point

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Three points

Two points

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Triangulation file

3. Then we can select the surface and click \overline{OK} to do the elevation control.

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Total 1	Page 1/1
Data type	Surface name
Triangulatio	1
-	
Add	Edit Delete OK

4. If the device is in the surface, there will be designed height and H difference shown in the below bar. If it is outside, there will be '?'.

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387.340 m 00 m a:?

We can control the elevation with the designed surface. And know the any point H difference in the range of the surface.

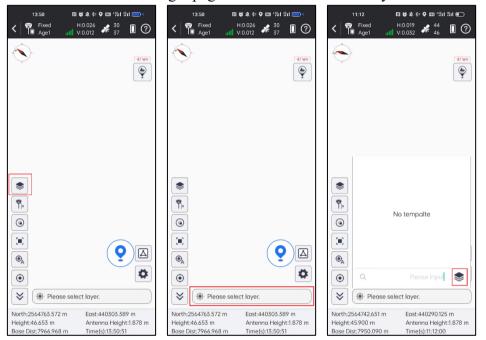
5-8 GIS Survey

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GIS survey can define the required feature attribute database and collect shape data containing various required feature attributes, which is convenient for post-processing of GIS data in the later stage.

1.For the new project, we need to import or input a feature manage database. Click

and enter to feature manager page. We can also click the layer bar to enter to it.



2.In feature manager, we can add, edit, delete, import and export the features.

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Add:

Click Add, input the feature name and nick name, choose the feature type (Point/PolyLine/Polygon) and set the feature style, then click OK.

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Then we need to add the attribute of it, click Add. Input the Attributes Name, Nick

name, Field Type and click OK. If the input of the attributes finished, click OK.

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						Name	Attrs. name	Field Type	Alias
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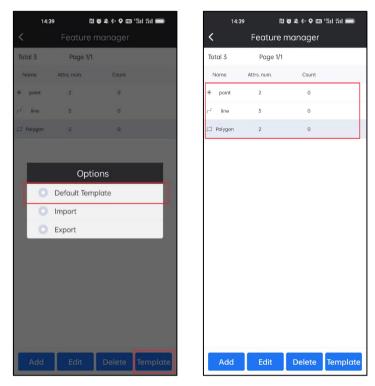
Edit: Select any feature, click Edit, then we can edit it.

Delete: Select any feature, click Delete, then we can delete it.

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Total 3	Page 1/1	
Name	Attrs. num.	Count
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r1 line	3	0
디 Polygon	2	0
Add	Edit	Delete Template

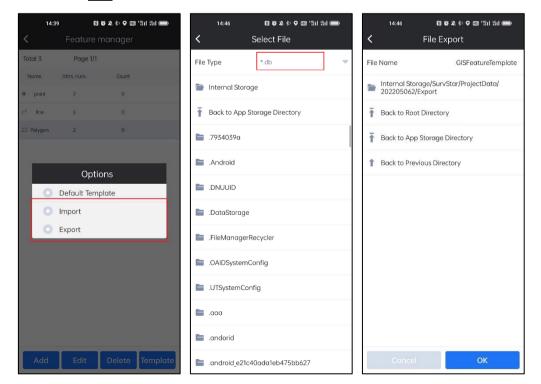
Default Template:

Click Template and click Default Template, there will load the default template to it. It has three features: Point, Line and Polygon.



Import/Export Template:

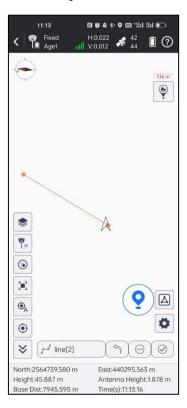
Click Template and click Import/Export, select the template file(*.db)/select the export path and click OK. The template file will be imported or exported.



3.After the feature manager completed, we can use it by clicking the below layer bar. Select the feature and then we can start GIS survey.

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4.For example, select a line feature template. And start to do GIS survey.



Click this, it will go back to the previous operation
Click this, we can edit the attributes of current feature.
Click this, we can finish surveying this feature.

5.We can check and manage the shape in Geometry Database. Click (and enter to Geometry Database. In Geometry Database, it can import/export shape file(*.shp), delete and continue to survey the feature.

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5-9 Sea Survey

This function is being improved and tested.

5-10 Line Construction Stakeout

This function is being improved and tested.

5-11 Line Pointwise Stakeout

This function is being improved and tested.

5-12 Cross-section Survey

This function is being improved and tested.

5-13 Cross-section Stakeout

This function is being improved and tested.

Chapter 6 Tools

6-1 Localization

In general, GPS receiver output data is WGS-84 latitude and longitude coordinates. The coordinates need to be converted to the construction measure coordinates, which requires software to calculate and configure coordinate conversion parameters. Localization is the main tool to complete this conversion.

It contains Add, Edit, Delete, Calculate, Import, Export and Settings operation.

No. Name Northing Easting Height 1 1 4167203220 635470.089 15.982 2 2 4167572935 636453.364 8.312 3 3 4167572932 636453.361 8.304 4 4 4167572935 636453.362 8.302	۱ ۲	1:35 L	ه ocalizatio_	ថ≮ះ ឈា≟កំដេក DN	
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	4	4	4167572.935	636453.362	8.302
Add Edit Delete Calculate	Add	Delis	Poleta	Coloulous	

Add:

Click $\overline{\text{Add}}$, we can add the coordinate point. If we have the surveyed point in database, we can click the icon in the right of the Known(local) coordinates bar. And select the coordinate transformation points with the targeted coordinate. Click $\overline{\text{OK}}$. Then the NEH will input automatically.

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Known(local) coordinates	ø	Ρ	rt nan	ne 👻 Plea			Search	Known(local) coordinates	Q°
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Northing	m	N	lame	Northing	Easting	Height	Lotitude	Northing	2564791.523 m
Easting			S1	2564489.649	658469.796		N23°10'21.7701"	Easting	440370.345 m
Easting	m		Pt6 Pt5	84649.000	75649.000 54697.000		N0°45'50.3798"1 N0°12'32.3265"	Easting	440370.343 m
Height	m	÷	Pt4	2564791.523			N23°10'54.5173'	Height	18.093 m
Geodetic Coordinates	♀ ◎	Ŷ	Pt3	2564809.012	440373.224	18.409	N23°10'55.0862	Geodetic Coordinates	Q @
Coordinate Type	BLH >	Ŧ	Pt2	2564809.985	440369.583	18.239	N23°10'55.1173"	Coordinate Type	BLH >
Lat	d.mmssssss	Ŧ	Pt1	2564798.089	440366.658	18.096	N23°10'54.7303	Lat	
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Or we can input the coordinate directly.

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And then we need to input the same point's BLH to it. If we If we have the surveyed BLH in point database, we can click the icon in the right of the Geodetic Coordinates bar. And select the same points with the BLH. Click OK. Then the BLH will input automatically.

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Northing	2564791.523 m	N	lame	Northing	Easting	Height	Latitude	Northing	2564791.523 m
Easting	440370.345 m		S1 Pt6	2564489.649 84649.000	658469.796 75649.000		N23°10'21.7701" N0°45'50.3798"	Easting	440370.345 m
Height	18.093 m		Pt5	23147.000	54697.000	45.000	N0°12'32.3265"	Height	18.093 m
Geodetic Coordinates	₽ ©	ም	Pt4 Pt3	2564791.523 2564809.012		18.093 18.409	N23°10'54.5173" N23°10'55.0862	Geodetic Coordinates	Q @
Coordinate Type	BLH >	Ŧ	Pt2	2564809.985	440369.583	18.239	N23°10'55.1173"	Coordinate Type	BLH >
Lat	d.mmssssss	Ŧ	Pt1	2564798.089	440366.658	18.096	N23°10'54.7303	Lat	N23°10'21.7701"
Lon	E0°00'00.0000"							Lon	E115°32'51.2893"
Ellipsoid Height								Ellipsoid Height	25.965 🚫
Option								Option	
Use Horizontal Control								Use Horizontal Control	

We can also input BLH directly.

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Known(local) coordinates	Q°
Point Name	Pt4
Northing	2564791.523 m
Easting	440370.345 m
Height	18.093 m
Geodetic Coordinates	Q @
Coordinate Type	BLH >
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We can also put the device in the point and collect the BLH in site. Click the icon in the right of the Geodetic Coordinates bar. And click \overline{OK} to collect it.

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Known(local) coordinates	¢
Point Name	Pt4
Northing	2564791.523 m
Easting	440370.345 m
Height	18.093 m
Geodetic Coordinates	Q o °
oordinate Type	BLH >
t	d.mmssssss
ſ	E0°00'00.0000"
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Then we need to select whether to use the point with horizontal control or vertical control. And Click OK. This point will participate in calculation.

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	alization
Point Name	Pt4
Northing	2564791.523 m
Easting	440370.345 m
Height	18.093 m
Geodetic Coordinates	Q @
Coordinate Type	BLH >
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Lon	E113°25'00.9770*
Ellipsoid Height	55.576
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Use Horizontal Contro	
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Edit:

Select any point and click Edit. We can edit the coordinate of the selected point and select whether to use the point with horizontal control or vertical control.

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No.	Name	Northing	Easting	Height	Known(local) coordinates	
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2	2	4167572.935	636453.364	8.312	Point Name	Pt4
3	3	4167572.932	636453.361	8.304	Northing	2564791.523 m
4	4	4167572.935	636453.362	8.302	Easting	440370.345 m
5	Pt4	2564791.523	440370.345	18.093		
					Height	18.093 m
					Geodetic Coordinates	Q @
					Coordinate Type	BLH >
					Lat	N23°10'53.7696"
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Delete:

Select any point and click Delete. We can delete the selected point.

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No.	Name	Northing	Easting	Height	No.	Name	Northing	Easting	Height	No.	Name	Northing	Easting	Height
1	1	4167203.270	635470.089	15.982	1	-1	4167203.270	635470.089	15.982	1	1	4167203.270	635470.089	15.982
2	2	4167572.935	636453.364	8.312	2	2	4167572.935	636453.364	8.312	2	2	4167572.935	636453.364	8.312
3	3	4167572.932	636453.361	8.304	3	3	4167572.932	636453.361	8.304	3	3	4167572.932	636453.361	8.304
4	4	4167572.935	636453.362	8.302	4	4	4167572.935	636453.362	8.302	4	4	4167572.935	636453.362	8.302
5	Pt4	2564791.523	440370.345	18.093	5	Pt4	2564791.523	440370.345	18.093					
							Prompt							
					10									
						Are you su	re to delete	this record	1					
								ОК						
	_		_					_			_			
Add	Edit	Delete	Calculate		Add	Edit	Delete	Calculate		Add	Edit	Delete	Calculate	e

Calculate:

After the coordinate transformation points all inputted. We can click Calculate. Then there will show a coordinates System report. We can save the report by clicking Save. And click Apply, the parameters will apply to the current project.

15:44	N 🛛 🕸 🕸 📾 🗂 🏦 🛑
< Coordinates S	System Report
Ellipsoid	Parameter
Ellipsoid Name	CGCS2000
Semimajor Axis	6378137
1/f	298.2572220960422
Projection	Parameters
Projection Mode	Gauss Kruger
Central Meridian	E114°00'00.0000"
False Northing	0.000
False Easting	50000.000
Scale Factor	1
Projection Height	0.000
Latitude of Origin	N0°00'00.0000"
Save	Apply

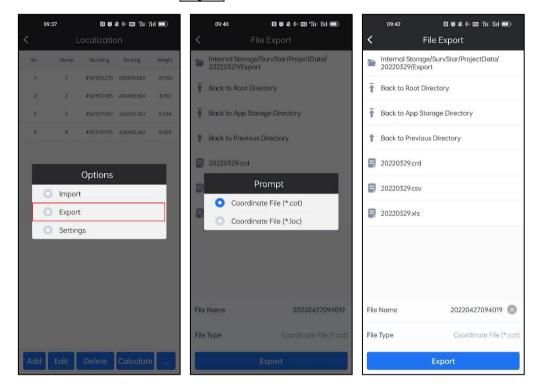
Import:

Click ... and Click Import. Select the file type: *.cot(dd.mmssss), *.cot(dd.dddddd) and *.loc. Select file path and click the file. Click OK.

1	1:35	เข	🖸 🌮 💷 "fiil "	5d 🗊		09:37	RI 60 1	🕯 🕸 🖾 👬 l 1	նվ 💼		09:34	N 6 & \$: 00 %i %i m
<	L	ocalizatio	on		<					<	Imp	oort File
No.	Name	Northing	Easting	Height	No.	Name	Northing	Easting	Height	File	Туре	*.cot(dd.mmssss) 🔻
1	1	4167203.270	635470.089	15.982	1	1	4167203.270	635470.089	15.982		Internal Storage	*.cot(dd.mmssss)
2	2	4167572.935	636453.364	8.312	2	2	4167572.935	636453.364	8.312		5	*.cot(dd.dddddd)
3	3	4167572.932	636453.361	8.304	5	3	4167572.932	636453.361	8.304	Ť	Back to App Stor	
4	4	4167572.935	636453.362	8.302	.4	-4	4167572.935	636453.362	8.302		.7934039a	*.loc
											Android	
							Options			-	DNUUD	
						Import	l.			-	DNUUD	
						 Export 					.DataStorage	
						Setting	ls	_			.FileManagerRecy	rcler
											.OAIDSystemConf	ig
											.UTSystemConfig	
											.000.	
											.andorid	
Add	Edit	Delete	Calculate	e	Add	Edit	Delete	Calculate				ОК

Export:

Click ... and Click Export. Select the file type: *.cot(dd.mmssss) or *.loc. Select file path and click the file. Click Export.



Settings:

Click ... and Click Settings. We can set localization method, height fitting method, horizontal control accuracy limit and vertical control accuracy limit.

1 1 4167205.270 635470.089 15.982	09	9:37	RI 66 :	a 🕸 📾 '''''' '	îıl 🗩	09:51 🛛 🕲 🗞 🕸 🖏 🏦 折川 折川
1 1 4167203.270 655470.069 15.982 2 2 4167572932 656453.364 8.312 3 3 4167572932 656453.361 8.304 4 4 4167572935 656453.362 8.302 Vertical Control Accuracy Limit						 Localization Settings
2 2 4167572935 636455.564 8.312 3 3 4167572935 636455.364 8.312 4 4 4167572935 656455.362 6.302 Vertical Control Accuracy Limit Vertical Control Accuracy Limit 0 Import Export Export	No.	Name	Northing	Easting	Height	Localization Method Horizontal Control+ He Fit
2 2 4167372935 636453.364 8.312 3 5 4167572932 636453.561 8.304 4 4 4167572935 656453.562 6.502 Vertical Control Accuracy Limit Vertical Control Accuracy Limit Options Import Export	1	1	4167203.270	635470.089	15.982	Height Fitting Method Auto Ch
4 4 4167572935 656463.562 6.302 Options Import Export	2	2	4167572.935	636453.364	8.312	nogin (nano in a sina a si
Options Import Export	3	3	4167572.932	636453.361	8.304	Horizontal Control Accuracy Limit
Import Export	4	4	4167572.935	636453.562	8.302	Vertical Control Accuracy Limit
Import Export		-	0.11			
C Export		Impor				
O Settings					-	
		Settin	gs			

6-2 Coordinate Converter

10:15	N 🛇 🎗 🕸 📾 🐩 👘 💷	10:15	N O A 8: 00 % 1 % 1 🗩
< Coordinat	e Conversion	< Coordina	te Conversion 🛛 🕐
Source Coordinates	<u>Q</u> o	Source Coordinates	<u>Q</u>
Conversion Type	🔾 BLH 🔵 NEH	Conversion Type	O BLH O NEH
Lat	d.mmssssss	Northing	m
Lon	E0°00'00.0000"	Easting	m
Ellipsoid Height		Height	m
Target Coordinates		Target Coordinates	
Northing	m	Lat	0°00'00.0000*
Easting	m	Lon	0°00'00.0000*
Height	m	Ellipsoid Height	
Convert	Save	Convert	Save

By clicking this, we can convert coordinate from BLH to NEH or from NEH to BLH in the current project parameters. We need to select the Conversion Type firstly.

We can input coordinate directly.

10:24 Coordinate	🗈 ö 🎗 ៖ 📾 ដោ ដា 📼 e Conversion 🛛 ?
Source Coordinates	ŶĨ
Conversion Type	O BLH O NEH
Lat	N23°10'21.7701"
Lon	E115°32'51.2893"
Ellipsoid Height	25.965
Target Coordinates	
Northing	m
Easting	m
Height	m
Convert	Save

If we have the surveyed point in database, we can click the icon in the right of the Source Coordinates bar. And select a point. Click \overline{OK} . Then the BLH or NEH will input automatically.

10:15	R 🎯 🎗 🕸 📾 🏦 👘 🗩
< Coordinate	Conversion
Source Coordinates	Q •
Conversion Type	O BLH O NEH
Lat	d.mmssssss
Lon	E0°00'00.0000"
Ellipsoid Height	
Target Coordinates	
Northing	m
Easting	m
Height	m
Convert	Save

We can also put the device in the point and collect the coordinate in site. Click the icon in the right of the Source Coordinates bar. And click OK to collect it.

10:15	N & X * ⊠ 11 11 ■ Conversion ?	15:25 <	៧ ថ ៖ ា ដា ដា = Collect Point
Source Coordinates	ŶĨ	Antenna Height	1.800m,Pole Heig
Conversion Type	O BLH O NEH	Pt name	
.at	d.mmssssss	Record	<1/1>Collection Finis
_on	E0°00'00.0000"	Solution	<21/24>Si
Ellipsoid Height		North	2564768.79
arget Coordinates		East	440302.56
Northing	m	Height	55.5
asting	m	HRMS	O
Height	m	VRMS	2
		Age	
		Distance to Last	Point 21816
		Longitude	E113°25'00.9
Convert	Save	Settings	Restart OK

Click Convert and the target coordinates will be calculated and shown in the below bars.

10:35 Coordinate	N & & ☆ "#il #il ■⊃ Conversion ??	10:36 Coordinat	® ଷ & ଶ ໝ "ଶା ଶା 📼 e Conversion (
Source Coordinates	♀ °	Source Coordinates	9 0
Conversion Type	O BLH O NEH	Conversion Type	O BLH O N
Lat	23.10217701	Northing	2564489.649
Lon	E115°32'51.2893"	Easting	658469.796
Ellipsoid Height	25.965	Height	25.649
Target Coordinates		Target Coordinates	
Northing	2564507.137 m	Lat	N23°10'21.2028
Easting	658472.676 m	Lon	E115°32'51.1815
Height	25.965 m	Ellipsoid Height	25.64
Convert	Save	Convert	Save

We can click Save to add the calculated coordinate to the point database.



6-3 Angle Converter

We can convert the angle format in this function. Select the input format and input the angle.

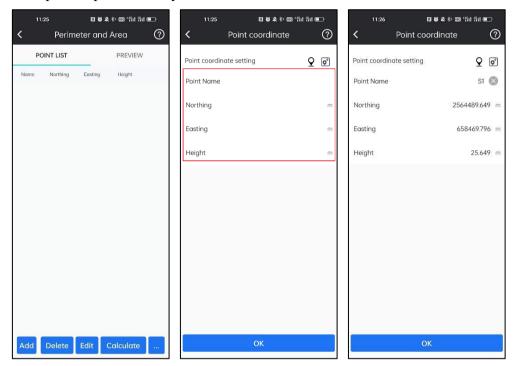
10:46	N 🛇 🎗 杉 💷 🖺 👘 💼	10:47	PI 66 & 8:	💷 🐩 #il 💷)	10:48	R 🗿 🎗 🕸 📾 🖏 🛍 💼
< Angle	e Converter	<	Angle Converte	er	< Ang	le Converter
Format	dd⁰mm'ssss" >	Format		dd°mm'ssss" >	Format	dd.mmssss >
dd°mm'ssss"	L	dd°mm'sss	s"		dd.mmssss	45.232564 🚫
Calculation Result		Calculation			Calculation Result	
dd(Decimal)	0	dd(Decima	1)	о	dd(Decimal)	0
dd.mmssss	0	dd	Format	0	dd:mm:ssss	0:00:00
dd:mm:ssss	0:00:00	da	dd(Decimal)	00	dd°mm'ssss"	0°00'00"
Radian	0	Ra	dd.mmssss	0	Radian	0
			dd:mm:ssss			
			dd°mm'ssss"	_		
		0	Radian			
Co	alculate		Calculate			Calculate

Click Calculate. Then it will be converted to other formats.

10:48	N 🗿 🎗 🌮 🚥 "Sil Sil 💷				
< Angle Converter					
Format	dd.mmssss >				
dd.mmssss	45.232564 🔘				
Calculation Result					
dd(Decimal)	45.39045556				
dd:mm:ssss	45:23:25.6400				
dd°mm'ssss"	45°23'25.6400"				
Radian	0.79221290				
C	Calculate				

6-4 Perimeter and Area

We can use the coordinate of the points to calculate the perimeter and area. Click Add. We can input the point directly.



If we have the surveyed point in database, we can click the icon in the right of the Point coordinate setting bar. And select a point. Click OK. Then the NEH will input automatically.

11:25 🛛 🗑 🎗 彩 📼 🛱	il fil 💷			1:36	6 (1)	** 📼	ଆ ଶା 💼	11:26	S & * D 'fil fil 💼
Point coordinate	?	<		Poir	nts Datab	base		< Point coor	rdinate
Point coordinate setting	♀ ☞	Ρ	t nan	ne × Plea			Search	Point coordinate setting	Q 0
Point Name		Tot	al 7	Pag	ge 1/1			Point Name	S1 🛞
Northing	m	18	lame	Northing	Easting	Height	Latitude	Northing	2564489.649 m
Easting	m	/	S1 Pt6	2564489.649 84649.000	658469.796 75649.000		N23°10'21.7701" N0°45'50.3798"	Easting	658469.796 m
Height	m	Ħ	Pt5	23147.000	54697.000	45.000	N0°12'32.3265'	Height	25.649 m
		Ŧ	Pt4	2564791.523	440370.345	18.093	N23°10'54.5173"		
		Ŧ	Pt3	2564809.012	440373.224	18.409	N23°10'55.0862		
		Ŧ	Pt2	2564809.985	440369.583	18.239	N23°10'55.1173'		
		Ŷ	Pt1	2564798.089	440366.658	18.096	N23°10'54.7303		
ОК			Add	Edit	Detai	ls	ок	ОК	

We can also put the device in the point and collect the coordinate in site. Click the icon in the right of the Point coordinate setting bar. And click OK to collect it.

11:25	N Ø ¥ * 00	°#u #u 💼
<	Point coordinate	?
Point coordir	nate setting	♀ °
Point Name		
Northing		m
Easting		m
Height		m
rieigin		
	ОК	

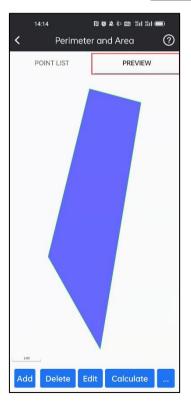
Click OK. And the point will add to point list.

14 <	⊧:06 Perim	ء ہ eter and	୫ 📾 ଖାଖା 🖬	• ?		
P	POINT LIST PREVIEW					
Nome	Northing	Easting	Height			
Pt4	2564791.523	440370.345	18.093			
Add	Delete	Edit	Calculate			

We can delete or edit a point after selecting it and then click Delete or Edit. When we finished the input of the points, then we click Calculate and there will show the result of perimeter and area.

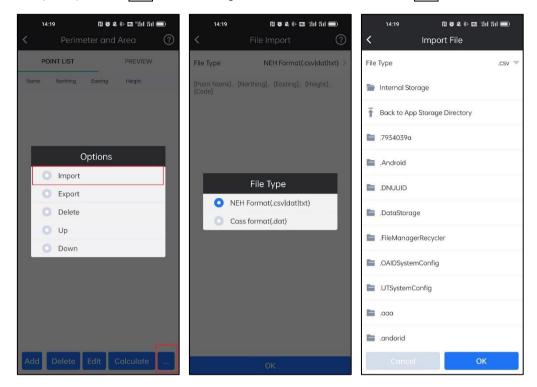
14	:12	4 Ø EI	\$: 📾 "fil fil 🗩		
<				?	
P	POINT LIST PREVIEW				
Name	Northing	Easting	Height		
Pt4	2564791.523	440370.345	18.093		
Pt3	2564809.012	440373.224	18.409		
Pt2	2564809.985	440369.583	18.239		
Pt1	2564798.089	440366.658	18.096		
	Calcu	lation Re	sult		
		a: 64.772 r ieter: 41.27			
		ОК			
Add	Delete	Edit C	alculate		

We can check the shape of the polygon by click the PREVIEW.



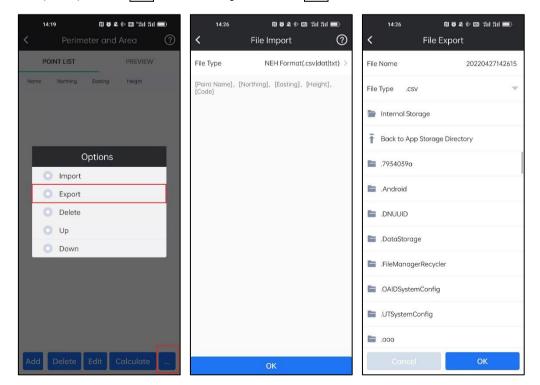
Import:

Click ... and Click Import. Select the file type: NEH Format(*.csv|dat|txt) or Cass Format(*.dat). Click OK. Select file path and click the file. Click OK.



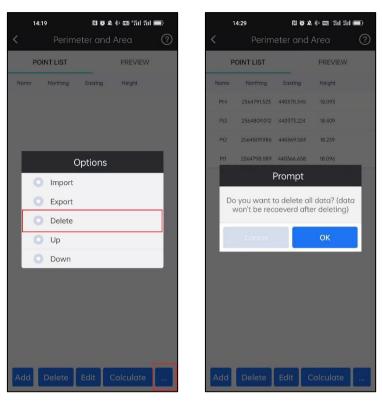
Export:

Click ... and Click Export. Select the file type: NEH Format(*.csv|dat|txt) or Cass Format(*.dat). Click OK. Select file path. Click OK.



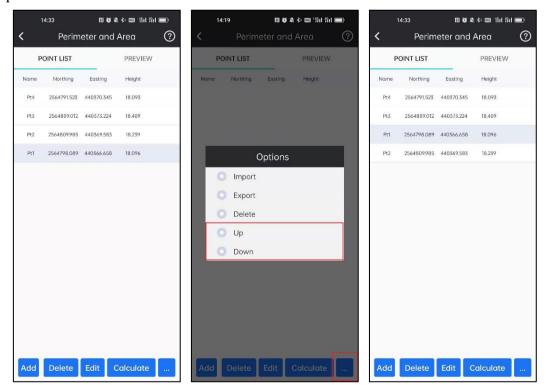
Delete all data:

Click ... and Click Delete. Click OK.



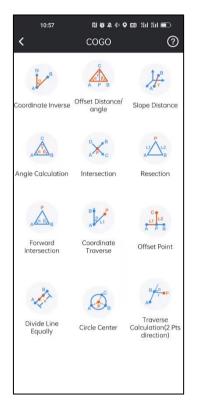
Up/Down Point:

Select a point, click ... and Click Up/Down. Then the selected point will move up/down.



6-5 COGO

Click COGO to enter to this page. According to the known coordinates, it can figure out position relations between point and point as well as between point and line. It includes Coordinate inverse calculation, Point line calculation, Vector, Two Lines Angle and other calculation, which will be introduced in the following.



The following three icons in COGO Calculation mean:



: Points Database.

There are three ways to set points: 1. Extract coordinates from Points Database; 2. Collect current GPS coordinates; 3. directly input values of Northing, Easting and Elevation.

Calculation result in COGO calculation can be stored in Points Database with Click Save.

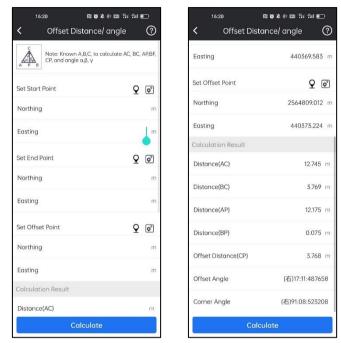
6-5-1 Coordinate Inverse

Set Start Point A and End Point B, and click Calculate to calculate the Horizontal Distance, Azimuth, H Difference, Slope Ratio and Slope Distance.

15:44 🕅 🐼 3	\$ \$: 💷 "Sil Sil 🗊	15:43	🎯 🎗 🕸 📾 "Sil Sil 🗩
< Inverse	0	< Inver	se (
Note: Known A, B, to co azimuth, H difference, s	lculate distance. lope rate of line AB	Easting	440369.583
Set Start Point	9 T	Height	18.239 🛞
Northing	m	Set End Point	9 (
Easting	m	Northing	2564809.012
Height	m	Easting	440373.224
Set End Point	? (*)	Height	18.409
occurron one	¥ 🗹	Calculation Result	
Northing	m	Horizontal Distance	3.769
Easting	m	Azimuth	104:57:42391
Height	m	H Difference	0.170
Calculation Result			
Horizontal Distance	m	Slope Ratio	4.5
Azimuth		Slope Distance	3.773
Calculate		Calcul	ate

6-5-2 Offset Distance/Angle

Set Start Point A, End Point B and Offset Point C, and then click <u>Calculate</u> to calculate the Distance(AC), Distance(BC), Distance(AP), Distance(BP), Offset Distance(CP), Offset Angle and Corner Angle.



6-5-3 Slope Distance

Set Start Point A and End Point B, and then click Calculate to calculate the Spatial Distance.

Mote: Known point A, B (Lat, Lon, H), to colculate spatial distance of between A and B. Note: Known point A, B (Lat, Lon, H), to colculate spatial distance of between A and B. Set Start Point	16:33	1 🛛 🕸 🎨 🖾 🛗 🖬 💷	16:35 Г	n 10 1 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Colculate spatial distance of between A and B. Colculate spatial distance of between A and B. Set Start Point Q O Lat d mmssses Lat 23.10547303 Lon E0°00'00.0000° Lon E113°25'03.2 Ellipsoid Height(m) Té Q O Lat N0°00'00.0000° Lon E113°25'03.2 Lat N0°00'00.0000° Lat N23°10'55. Lon E0°00'00.0000° Lon E113°25'03.3 Ellipsoid Height(m) Té Q O Lat N0°00'00.0000° Lon E113°25'03.3 Calculation Result Calculation Result Calculation Result	Spatial Di	stance 🕜	< Spatial D	istance
Lat dmmsssssi Lat 23.10547303 Lon E0°00'00.0000" Lon E113°25'03.2 Ellipsoid Height(m) Ellipsoid Height(m) 18 Lat N0°00'00.0000" Set End Point Q Lat N0°00'00.0000" Lat N23°10'55. Lon E0°00'00.0000" Lat N23°10'55. Lon E0°00'00.0000" Lon E113°25'03.3 Ellipsoid Height(m) 18 23.10547305 Lon E0°00'00.0000" Lon E113°25'03.3 Ellipsoid Height(m) 18 23.10547305 Lon E113°25'03.3 20.101 20.101 Ellipsoid Height(m) 18 23.101 Calculation Result Calculation Result 23.101	calculate spatial di	A, B (Lat, Lon, H), to stance of between A and	calculate spatial a	t A, B (Lat, Lon, H), to listance of between A
Lon E0°00'00.0000° Lon E113°25'03.2 Ellipsoid Height(m) IEllipsoid Height(m) 18 Set End Point Image: Color of the i	Set Start Point	Q @	Set Start Point	Ŷ
Ellipsoid Height(m) Ellipsoid Height(m) 18 Set End Point Image: Color of the image	Lat	d.mmsssss	Lat	23.10547303
Set End Point Image: Constraint of the set of t	Lon	E0°00'00.0000"	Lon	E113°25'03.2
Lat N0°00'00.0000° Lat N23°10'55. Lon E0°00'00.0000° Lon E113°25'03.3 Ellipsoid Height(m) Ellipsoid Height(m) 18 Calculation Result Calculation Result Calculation Result	Ellipsoid Height(m)		Ellipsoid Height(m)	18
Lon E0°00'00.0000° Lon E113°25'03.3 Ellipsoid Height(m) 18 Calculation Result Calculation Result	Set End Point	Q 0°	Set End Point	Ŷ
Ellipsoid Height(m) 18 Calculation Result Calculation Result	Lat	N0°00'00.0000"	Lot	N23°10'55
Calculation Result Calculation Result	Lon	E0°00'00.0000"	Lon	E113°25'03.3
	Ellipsoid Height(m)		Ellipsoid Height(m)	18
Spatial Distance m Spatial Distance 12.24	Calculation Result		Calculation Result	
	Spatial Distance	m	Spatial Distance	12.24

6-5-4 Angle Calculation

16:48	10 📽 🎗 🕫 🖽 111 111 💼	16:51	N 6 & * 💷 "Ai fii	
Two Lir	nes Angle 🛛 🧿	<	Two Lines Angle	?
A ΔB Rote: Known pr	pint A, B, C, to calculate angle	Northing	256479	8.089 r
Point A	Q @	Easting	440366.658	8 🚫 r
Northing	m	Point B		Q @
Easting	m	Northing	256480	9.985 r
Point B	Q @	Easting	44036	9.583 r
Northing	m	Point C		Q @°
Easting	m	Northing	256480	19.012 r
Point C	♀ ♂	Easting	44037	3.224 r
	¥ ©	Calculation	Result	
Northing	m	Angle (a)	17°11'48.7658"(342°48'1'	1.2342")
Easting	m."	Angle (β)	88°51'07.6792"(271°08'52	.3208")
Calculation Result			77057107 5550100 (00015	44500
Angle (a)		Angle (γ)	73°57′03.5550"(286°02′56	.4450")
Cal	culate		Calculate	

Set Point A, Point B and Point C, and then click Calculate to calculate the Angle ABC, BAC and ACB.

6-5-5 Intersection

	• — — III III % & 3	17:00	0 🍯 🎗 🎋 🚥 "ân ân 🗔 🖗
Interse	ction ⑦	< Ir	ntersection
A A A A A A A A A A A A A A A A A A A	A, B, C, D, to colculate	Northing	2564791.523
Point A	Q @	Easting	440370.345
Northing	m	Point C	Q @
asting	m	Northing	2564809.985
oint B	Q	Easting	440369.583
lorthing	m	Point D	<u>Q</u>
asting	m	Northing	2564809.012
oint C	?	Easting	440373.224
lorthing	<u>*</u> &	Calculation Result	
worthing		Northing	2564813.005 n
Easting	m	Easting	440358.282
Point D	Q @	Intersect Angle	45:43:218888
Save	Calculate	Save	Calculate

Set Point A, Point B, Point C and Point D, and then press Calculate to calculate the intersection coordinates and intersect angle.

6-5-6 Resection

Set Line L1, L2, Point A and Point B, and then click Calculate to calculate the point coordinates.

17:05 Dito	义 称 109 1年日 1日 💷 🐐	17:05	□ 6 2 米 國 指d 指d
< Resection	~		Resection ⑦
P Note: known point A,	B, and distance L1, L2,	MZ20	
A = B = B = B = B = B = B = B = B = B =		Line L1、L2	
Line L1、L2		L1	12 m
u	m	L2	1 <mark>2</mark> 🛞 m
L2	m	Point A	Q @
Point A	Q @	Northing	2564798.089 m
Northing	m	Easting	440366.658 m
Easting	m	Point B	Q @
Point B	♀ °	Northing	2564809.985 m
Northing	m	Easting	440369.583 m
Easting	m	Calculation Result	
Calculation Result		Northing	2564806.501 m
Northing	m	Easting	440358.100 m
Save	Calculate	Save	Calculate

6-5-7 Forward Intersection

Set Angle α , β , Point A and Point B, and then click Calculate to calculate the point coordinates.

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Forward Int	ersection ⑦	< Forward	d Intersection (
Note: known A B, 2	A=a, $\angle B=\beta$, to calculate P.	Angle α, β	
Angleα, β		α	30°00'00.000
α	0°00'00.0000"	β	30
β	d.mmssssss	Point A	오 (
Point A	Q o°	Northing	2564798.089
Northing	m	Easting	440366.658
Easting	m	Point B	오 (
Point B	Q @	Northing	2564809.985
Northing	m	Easting	440369.583
Easting	m	Calculation Result	
Calculation Result		Northing	2564804.881
Northing	m	Easting	440364.686
Save	Calculate	Save	Calculate

6-5-8 Coordinate Traverse

Set Line L1, Angle α , Point A and Point B, and then click Calculate to calculate the point coordinates.

17:14 🔃 10 🎗 🕸 🕮 "취비 1	ຳເI 💷 🐐	17:14	6 & 8: 💷 "fiil fiil 🥮 4
< Traverse	?	< Trave	erse
Note: known A, $\angle A=\alpha$, AP=L1, calcu	late P	L1	100 m
Line L1, Angle α		α	30 🙁
L1	m	Azimuth / 2 Pts Direction	Reference Point Direction
α d.m	1111555555	Point A	♀
Azimuth / 2 Pts Direction Referenc Di	e Point > rection >	Northing	2564798.089 m
Point A	Q 0°	Easting	440366.658 m
Northing	m	Point B	♀ •°
Easting	m	Northing	2564809.985 m
Point B	Q 0°	Easting	440369.583 m
Northing	m	Calculation Result	
Easting	m	Northing	2564870.248 m
Calculation Result		Easting	440435.890 m
Save Calcula	ate	Save	Calculate

6-5-9 Offset Point

Set Start Point A, End Points B, Line L1(from A to P), Line L2(Offset Distance), and then click Calculate to calculate the point coordinates.

17:21 🛛 🗑 🎗	8: 🖾 "fil fil 🥅 +	17:21	6 🔺 🕸 📾 🕅 🕅 (
C Offset Poir	nt 🕐	✓ Offset	Point
C L2 L1 L2 A P B to calculate point C	and distance L1, L2,	Set Start Point	ç
Set Start Point	Q @	Northing	2564798.0
Northing	m	Easting	440366.0
Easting	m	Set End Point	ç
Set End Point	Q 0°	Northing	2564809.9
Northing	m	Easting	440369.
Easting	m	Set Parameters	
Set Parameters		L1(from A to P)	
L1(from A to P)	m	L2(Offset Distance)	5
L2(Offset Distance)	m	Calculation Result	
Calculation Result		Northing	2564801.3
Northing	m	Easting	440372.7
Save	Calculate	Save	Calculate

6-5-10 Divide Line Equally

17:24 🛛 🗑 🤅	🗞 🕸 🛱 ti ti ti 🧰 🛉	17:24	1) 🌀 🎗 🕸 📾 "fill fill 💷 🗍
C Divide Line E	Equally ⑦		ne Equally 🤇
Note: known point A	B, to divide line AB into	Set End Point	<u>Q</u> o°
many sections equal		Northing	2564809.985
Set Start Point	Q @	Easting	440369.583
Northing	m	Height	18.239
Easting	m	Set Parameters	
Height	m	Section Number	3 🔇
		Calculation Result	
Set End Point	Q @	Northing 1	2564802.054
Northing	m	Easting 1	440367.633
Easting	m.	Height 1	18.144
Height	m	Northing 2	2564806.020
Set Parameters			
Section Number		Easting 2	440368.608
Calculation Result		Height 2	18.191
Save	Calculate	Save	Calculate

Set Start Point A, End Point B, and Section Number, and then click Calculation to calculate n-1 coordinates.

6-5-11 Circle Center

۲۶:29 ال ۵ ک ا≎ ۵۵ Circle Center	1 %11 📼 🕈	17:29 N Circle C	७ ৯ ३: 📾 भा भा 📼 । Center 🔗
$ \begin{array}{c} & \\ & \\ & \\ & \\ & \\ & \\ & \\ & \\ & \\ & $	nt C. Calculare	Known point A, pr center of a circle	pint B and point C. Calculare point P.
Point A Point B	Point C	Point A O Point	t B O Point C
Coordinate Detail	Q •	Coordinate Detail	Q @
North	m	North	2564798.089 🔘 m
East	m	East	440366.658 m
Height	m	Height	18.096 m
Calculation Result		Colculation Result N:2564803.616 E:440369.832 H:18.248	
Save Calc	ulate	Save	Calculate

Set Point A, Point B, and Point C, and then click Calculation to calculate the center of a circle point coordinates.

6-5-12 Traverse Calculation(2 Pts direction)

Set Point A, Point B, Angle a and Line r, and then click Calculation to calculate the point coordinates.

?

17:32 № 8 ¥ C Traverse Calculat direction			N © ೩ ३ः छा 'ñil গা। —) Calculation(2 Pts rection)
$ A = \frac{B}{r} P = r. Calculare point F $		B = r. Calcul	A and point B, known angle a , are point P.
Point A	Point B	O Point A	Point B
Coordinate Detail	♀ ©	Coordinate Detail	Q @
North	m	North	2564809.985 m
East	m	East	440369.583 m
Height	m	Height	18.239 m
۵	d.mmssssss	۵	30°00'00.0000"
t.	m	r	5 🛞 m
Calculation Result		Calculation Result	
		N:2564813.593 E:440373.045 H:18.239	
Save	Calculate	Save	Calculate

6-6 FTP Share

By clicking this, we can share the file with FTP. Select the FTP Mode Settings: Client or Server.

	5 & 杉 103 部1 部1 🗩	09:44	N 6 & * @ "îi fii 🗩
<pre> FTP Sho </pre>	are	< FT	P Share
FTP Mode Settings	Client >	FTP Mode Settings	Client
IP	Please Input	IP	
Port	21	Port	2
Username	Please Input	Username	
Password	Please Input	Password	
		 Client Server 	
Cancel	Upload	Cancel	Upload

Client:

To use this mode, we need to have a server. And input IP, Port, Username and Password.

09:44	N 🏹 🎗 🕸 🕲 "Til til 🗩
< FTP S	hare
FTP Mode Settings	Client >
IP	Please Input
Port	21
Username	Please Input
Password	Please Input
Select File to Share	>
Cancel	Upload

Then click Select File to Share, Select the shared file and click Upload, then the file will upload to the server.

Share
Client >
Please Input
21
Please Input
Please Input
>
Upload

Server:

Select Server mode. We need to connect the same WIFI with the other device such as PC or smart phone. Then click Activate FTP Service. Then we can input the address shown in the page. And then we can transfer files with FTP. If we want to close it, we can click Deactivate FTP Service.

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K FTP Share	e	FTP Share	e
TP Mode Settings	Server >	FTP Mode Settings	Server
Connected to WIFI:	<unknown ssid=""></unknown>	Connected to WIF	l: <unknown ssid=""></unknown>
Prompt Please make sure devices arr AN, after service activated, TP software to manage file:	you can use any	Service enabled"Computer" access FTP service [ftp://10.9.20.14 Prompt Please make sure devices a LAN, after service activated	4:2121 re in the same
		LAN, after service activated FTP software to manage file	

6-7 File Share

By clicking this, we can share the data file to the other app or the other device. Select the shared file and click OK, then we can share the selected file.

10:08 🖪 🗿 🎗 🕸 🖼 👘 👘 👘		10:09		n 6 2 8: III	1*\$1 \$1 💷
Import File	<		Impo	ort File	
File Type *	File	Туре			* •
Internal Storage	-	Internal	Storage		
Back to App Storage Directory	Ť	Back to	App Storag	e Directory	
.turing.dat		.turing.c	iat		
.zxcid.dat		.zxcid.d	at		
.ZZZ		.zzz			
20220329.dat		202	20329.dat		
5A968A4B377F25ED0A1FD3C67B0CEE31		9			
QTAudioEngine		M Sh	nare files via	"OnePlus Sha	re".
etilqs_0PNVOvuZJdceUQb					6
etilqs_47mJxlptMcWhonc		WeChat	WeChot Moments	WeChat Favorites	Weibo
etilqs_50exRZz0aBP5N7w		8	\bigcirc	Ē	0
Cancel OK		现送给好友	Cloud Drive (R ecommended)		Messoges

6-8 Post-Process Points

By clicking this, we can calibrate the data collected without site calibration and after collection the data needs to calibrate data of a certain period. If we know the offset parameters, we can input directly.

11:03 R L i	5 🎗 🕸 🗘 📼 "ñil ñil 💷
< Post-Proce	ess Points
Marker Point Calibration	>
dX	h 😣
dY	1
dH	1
Clear	Refresh

We can also click Marker Point Calibration to calculate the offset parameters.

11:03 Г	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	11:06	R 16 4. 4: 9 📾 fil fil 🔳	11:06	[1] 16 A. *: 9 153 '위리 11 💷)
< Post-Pro	cess Points	< Post-Pro	ocess Points	<	Post-Process Points
Marker Point Calibration	n 👌	Known(local) coordina	tes 📀	Marker Poir	nt Calibration >
dX	þ 🙁	Northing	2564798.089 m	dX	11.894 🛞
dY	1	Easting	440366.658 m	dY	2.926
dH	1	Height	18.096 m	dH	0.143
		Geodetic Coordinates	଼ ତ		
		Lat	23.10551173 🛞		
		Lon	E113°25'03.3277"		
		Ellipsoid Height	18.239		
Clear	Refresh	Ca	Iculate	Cl	ear Refresh

Then click Refresh, select the time period to be corrected, click Refresh. Then select the Starting Time and the Ended Time, then the surveyed point in that period will be refreshed.

11	:09	r & 9 B	÷ • ₪ "fil fi	
:	В	ase Sele	ct	
otal 86	Pag	je 1/1		
Base ID	Starting Time	BaseB	BoseL	BoseH
1	2022-03-29 14:02:34	23:07:332312	113:22:065399	25.987
0	2022-03-29 14:05:07	23:07:332312	113:22:065399	25.987
t	2022-03-29 14:05:12	23:07:332312	113:22:065399	25.987
0	2022-03-29 14:05:42	23:10:529943	113:25:003593	46.576
0	0002-11-30 10:21:37	23:07:332312	113:22:065399	25.987
0	0002-11-30 17:16:30	23:10:529943	113:25:003593	46.576
0	0001-11-30 10:21:43	23:10:529943	113:25:003593	46.576
0	0001-11-30 15:52:03	23:10:529943	113:25:003593	46.576
0	0001-11-30 16:54:43	23:10:529943	113:25:003593	46.576
t	2020-11-03 09:59:20	22:59:582000	112:59:582000	30.500
4	2020-11-03 11:23:41	22:59:582000	112:59:582000	30.500
1	2020-11-03 11:24:09	22:59:582000	112:59:582000	30.500
1	2020-11-03 11:24:25	22:59:582000	112:59:582000	30.500
1	2020-11-03 14:01:53	22:59:582000	112:59:582000	30.500
1	2020-11-03	22-59-582000	112-59-582000	30.500
		Refresh		

11:11		& ≹: ♥ @ °#il #il
<	Post-Proces	s Points
Refresh Dat	e	2022-3-29
Starting Tim	ne	14:05:42
Ended Time		10:21:37
log		
dx=11.894 dy=2	926 dh=0.143	